administered to a human. The preparation of an aqueous composition that contains a protein as an active ingredient is well understood in the art. Typically, such compositions are prepared as injectables, either as liquid solutions or suspensions; solid forms suitable for solution in, or suspension in, liquid prior to injection can also be prepared. The preparation can also be emulsified.

3. NASAL DELIVERY

In certain embodiments, the pharmaceutical compositions may be delivered by intranasal sprays, inhalation, and/or other aerosol delivery vehicles. Methods for delivering genes, nucleic acids, and peptide compositions directly to the lungs *via* nasal aerosol sprays has been described *e.g.*, in U. S. Patent 5,756,353 and U. S. Patent 5,804,212 (each specifically incorporated herein by reference in its entirety). Likewise, the delivery of drugs using intranasal microparticle resins (Takenaga *et al.*, 1998) and lysophosphatidyl-glycerol compounds (U. S. Patent 5,725,871, specifically incorporated herein by reference in its entirety) are also well-known in the pharmaceutical arts. Likewise, transmucosal drug delivery in the form of a polytetrafluoroetheylene support matrix is described in U. S. Patent 5,780,045 (specifically incorporated herein by reference in its entirety).

4. LIPOSOME-, NANOCAPSULE-, AND MICROPARTICLE-MEDIATED DELIVERY

In certain embodiments, the inventors contemplate the use of liposomes, nanocapsules, microparticles, microspheres, lipid particles, vesicles, and the like, for the introduction of the compositions of the present invention into suitable host cells. In particular, the compositions of the present invention may be formulated for delivery either encapsulated in a lipid particle, a liposome, a vesicle, a nanosphere, or a nanoparticle or the like.

Such formulations may be preferred for the introduction of pharmaceutically-acceptable formulations of the nucleic acids or constructs disclosed herein. The formation and use of liposomes is generally known to those of skill in the art (see for example, Couvreur *et al.*, 1977; Couvreur, 1988; Lasic, 1998; which describes the use of liposomes and nanocapsules in the targeted antibiotic therapy for intracellular bacterial infections and diseases). Recently, liposomes were developed

with improved serum stability and circulation half-times (Gabizon and Papahadjopoulos, 1988; Allen and Choun, 1987; U. S. Patent 5,741,516, specifically incorporated herein by reference in its entirety). Further, various methods of liposome and liposome like preparations as potential drug carriers have been reviewed (Takakura, 1998; Chandran *et al.*, 1997; Margalit, 1995; U. S. Patent 5,567,434; U. S. Patent 5,552,157; U. S. Patent 5,565,213; U. S. Patent 5,738,868 and U. S. Patent 5,795,587, each specifically incorporated herein by reference in its entirety).

Liposomes have been used successfully with a number of cell types that are normally resistant to transfection by other procedures including T cell suspensions, primary hepatocyte cultures and PC 12 cells (Renneisen *et al.*, 1990; Muller *et al.*, 1990). In addition, liposomes are free of the DNA length constraints that are typical of viral-based delivery systems. Liposomes have been used effectively to introduce genes, drugs (Heath and Martin, 1986; Heath *et al.*, 1986; Balazsovits *et al.*, 1989; Fresta and Puglisi, 1996), radiotherapeutic agents (Pikul *et al.*, 1987), enzymes (Imaizumi *et al.*, 1990a; Imaizumi *et al.*, 1990b), viruses (Faller and Baltimore, 1984), transcription factors and allosteric effectors (Nicolau and Gersonde, 1979) into a variety of cultured cell lines and animals. In addition, several successful clinical trails examining the effectiveness of liposome-mediated drug delivery have been completed (Lopez-Berestein *et al.*, 1985a; 1985b; Coune, 1988; Sculier *et al.*, 1988). Furthermore, several studies suggest that the use of liposomes is not associated with autoimmune responses, toxicity or gonadal localization after systemic delivery (Mori and Fukatsu, 1992).

Liposomes are formed from phospholipids that are dispersed in an aqueous medium and spontaneously form multilamellar concentric bilayer vesicles (also termed multilamellar vesicles (MLVs). MLVs generally have diameters of from 25 nm to 4 μm. Sonication of MLVs results in the formation of small unilamellar vesicles (SUVs) with diameters in the range of 200 to 500 Å, containing an aqueous solution in the core.

Liposomes bear resemblance to cellular membranes and are contemplated for use in connection with the present invention as carriers for the peptide compositions. They are widely suitable as both water- and lipid-soluble substances can be entrapped, *i.e.* in the aqueous spaces and within the bilayer itself, respectively. It is

possible that the drug-bearing liposomes may even be employed for site-specific delivery of active agents by selectively modifying the liposomal formulation.

In addition to the teachings of Couvreur *et al.* (1977; 1988), the following information may be utilized in generating liposomal formulations. Phospholipids can form a variety of structures other than liposomes when dispersed in water, depending on the molar ratio of lipid to water. At low ratios the liposome is the preferred structure. The physical characteristics of liposomes depend on pH, ionic strength and the presence of divalent cations. Liposomes can show low permeability to ionic and polar substances, but at elevated temperatures undergo a phase transition which markedly alters their permeability. The phase transition involves a change from a closely packed, ordered structure, known as the gel state, to a loosely packed, less-ordered structure, known as the fluid state. This occurs at a characteristic phase-transition temperature and results in an increase in permeability to ions, sugars and drugs.

In addition to temperature, exposure to proteins can alter the permeability of liposomes. Certain soluble proteins, such as cytochrome c, bind, deform and penetrate the bilayer, thereby causing changes in permeability. Cholesterol inhibits this penetration of proteins, apparently by packing the phospholipids more tightly. It is contemplated that the most useful liposome formations for antibiotic and inhibitor delivery will contain cholesterol.

The ability to trap solutes varies between different types of liposomes. For example, MLVs are moderately efficient at trapping solutes, but SUVs are extremely inefficient. SUVs offer the advantage of homogeneity and reproducibility in size distribution, however, and a compromise between size and trapping efficiency is offered by large unilamellar vesicles (LUVs). These are prepared by ether evaporation and are three to four times more efficient at solute entrapment than MLVs.

In addition to liposome characteristics, an important determinant in entrapping compounds is the physicochemical properties of the compound itself. Polar compounds are trapped in the aqueous spaces and nonpolar compounds bind to the lipid bilayer of the vesicle. Polar compounds are released through permeation or when the bilayer is broken, but nonpolar compounds remain affiliated with the bilayer unless it is

disrupted by temperature or exposure to lipoproteins. Both types show maximum efflux rates at the phase transition temperature.

Liposomes interact with cells *via* four different mechanisms: endocytosis by phagocytic cells of the reticuloendothelial system such as macrophages and neutrophils; adsorption to the cell surface, either by nonspecific weak hydrophobic or electrostatic forces, or by specific interactions with cell-surface components; fusion with the plasma cell membrane by insertion of the lipid bilayer of the liposome into the plasma membrane, with simultaneous release of liposomal contents into the cytoplasm; and by transfer of liposomal lipids to cellular or subcellular membranes, or vice versa, without any association of the liposome contents. It often is difficult to determine which mechanism is operative and more than one may operate at the same time.

The fate and disposition of intravenously injected liposomes depend on their physical properties, such as size, fluidity, and surface charge. They may persist in tissues for h or days, depending on their composition, and half lives in the blood range from min to several h. Larger liposomes, such as MLVs and LUVs, are taken up rapidly by phagocytic cells of the reticuloendothelial system, but physiology of the circulatory system restrains the exit of such large species at most sites. They can exit only in places where large openings or pores exist in the capillary endothelium, such as the sinusoids of the liver or spleen. Thus, these organs are the predominate site of uptake. On the other hand, SUVs show a broader tissue distribution but still are sequestered highly in the liver and spleen. In general, this *in vivo* behavior limits the potential targeting of liposomes to only those organs and tissues accessible to their large size. These include the blood, liver, spleen, bone marrow, and lymphoid organs.

Targeting is generally not a limitation in terms of the present invention. However, should specific targeting be desired, methods are available for this to be accomplished. Antibodies may be used to bind to the liposome surface and to direct the antibody and its drug contents to specific antigenic receptors located on a particular cell-type surface. Carbohydrate determinants (glycoprotein or glycolipid cell-surface components that play a role in cell-cell recognition, interaction and adhesion) may also be used as recognition sites as they have potential in directing liposomes to particular cell types. Mostly, it is contemplated that intravenous injection of liposomal preparations would be used, but other routes of administration are also conceivable.

Alternatively, the invention provides for pharmaceutically-acceptable nanocapsule formulations of the compositions of the present invention. Nanocapsules can generally entrap compounds in a stable and reproducible way (Henry-Michelland *et al.*, 1987; Quintanar-Guerrero *et al.*, 1998; Douglas *et al.*, 1987). To avoid side effects due to intracellular polymeric overloading, such ultrafine particles (sized around 0.1 μm) should be designed using polymers able to be degraded *in vivo*. Biodegradable polyalkyl-cyanoacrylate nanoparticles that meet these requirements are contemplated for use in the present invention. Such particles may be are easily made, as described (Couvreur *et al.*, 1980; 1988; zur Muhlen *et al.*, 1998; Zambaux *et al.* 1998; Pinto-Alphandry *et al.*, 1995 and U. S. Patent 5,145,684, specifically incorporated herein by reference in its entirety).

VACCINES

In certain preferred embodiments of the present invention, vaccines are provided. The vaccines will generally comprise one or more pharmaceutical compositions, such as those discussed above, in combination with an immunostimulant. An immunostimulant may be any substance that enhances or potentiates an immune response (antibody and/or cell-mediated) to an exogenous antigen. Examples of immunostimulants include adjuvants, biodegradable microspheres (*e.g.*, polylactic galactide) and liposomes (into which the compound is incorporated; *see e.g.*, Fullerton, U.S. Patent No. 4,235,877). Vaccine preparation is generally described in, for example, M.F. Powell and M.J. Newman, eds., "Vaccine Design (the subunit and adjuvant approach)," Plenum Press (NY, 1995). Pharmaceutical compositions and vaccines within the scope of the present invention may also contain other compounds, which may be biologically active or inactive. For example, one or more immunogenic portions of other tumor antigens may be present, either incorporated into a fusion polypeptide or as a separate compound, within the composition or vaccine.

Illustrative vaccines may contain DNA encoding one or more of the polypeptides as described above, such that the polypeptide is generated *in situ*. As noted above, the DNA may be present within any of a variety of delivery systems known to those of ordinary skill in the art, including nucleic acid expression systems, bacteria and viral expression systems. Numerous gene delivery techniques are well

known in the art, such as those described by Rolland, *Crit. Rev. Therap. Drug Carrier Systems 15*:143-198, 1998, and references cited therein. Appropriate nucleic acid expression systems contain the necessary DNA sequences for expression in the patient (such as a suitable promoter and terminating signal). Bacterial delivery systems involve the administration of a bacterium (such as *Bacillus-Calmette-Guerrin*) that expresses an immunogenic portion of the polypeptide on its cell surface or secretes such an epitope. In a preferred embodiment, the DNA may be introduced using a viral expression system (*e.g.*, vaccinia or other pox virus, retrovirus, or adenovirus), which may involve the use of a non-pathogenic (defective), replication competent virus. Suitable systems are disclosed, for example, in Fisher-Hoch *et al.*, *Proc. Natl. Acad. Sci. USA 86*:317-321, 1989; Flexner *et al.*, *Ann. N.Y. Acad. Sci. 569*:86-103, 1989; Flexner *et al.*, *Vaccine 8*:17-21, 1990; U.S. Patent Nos. 4,603,112, 4,769,330, and 5,017,487; WO 89/01973; U.S. Patent No. 4,777,127; GB 2,200,651; EP 0,345,242; WO 91/02805; Berkner, *Biotechniques 6*:616-627, 1988; Rosenfeld *et al.*, *Science 252*:431-434, 1991; Kolls *et al.*, *Proc. Natl. Acad. Sci. USA 91*:215-219, 1994; Kass-Eisler *et al.*, *Proc. Natl. Acad. Sci. USA 90*:11498-11502, 1993; Guzman *et al.*, *Circulation 88*:2838-2848, 1993; and Guzman *et al.*, *Cir. Res. 73*:1202-1207, 1993. Techniques for incorporating DNA into such expression systems are well known to those of ordinary skill in the art. The DNA may also be "naked," as described, for example, in Ulmer *et al.*, *Science 259*:1745-1749, 1993 and reviewed by Cohen, *Science 259*:1691-1692, 1993. The uptake of naked DNA may be increased by coating the DNA onto biodegradable beads, which are efficiently transported into the cells. It will be apparent that a vaccine may comprise both a polynucleotide and a polypeptide component. Such vaccines may provide for an enhanced immune response.

It will be apparent that a vaccine may contain pharmaceutically acceptable salts of the polynucleotides and polypeptides provided herein. Such salts may be prepared from pharmaceutically acceptable non-toxic bases, including organic bases (*e.g.*, salts of primary, secondary and tertiary amines and basic amino acids) and inorganic bases (*e.g.*, sodium, potassium, lithium, ammonium, calcium and magnesium salts).

While any suitable carrier known to those of ordinary skill in the art may be employed in the vaccine compositions of this invention, the type of carrier will vary

depending on the mode of administration. Compositions of the present invention may be formulated for any appropriate manner of administration, including for example, topical, oral, nasal, intravenous, intracranial, intraperitoneal, subcutaneous or intramuscular administration. For parenteral administration, such as subcutaneous injection, the carrier preferably comprises water, saline, alcohol, a fat, a wax or a buffer. For oral administration, any of the above carriers or a solid carrier, such as mannitol, lactose, starch, magnesium stearate, sodium saccharine, talcum, cellulose, glucose, sucrose, and magnesium carbonate, may be employed. Biodegradable microspheres (*e.g.*, polylactate polyglycolate) may also be employed as carriers for the pharmaceutical compositions of this invention. Suitable biodegradable microspheres are disclosed, for example, in U.S. Patent Nos. 4,897,268; 5,075,109; 5,928,647; 5,811,128; 5,820,883; 5,853,763; 5,814,344 and 5,942,252. One may also employ a carrier comprising the particulate-protein complexes described in U.S. Patent No. 5,928,647, which are capable of inducing a class I-restricted cytotoxic T lymphocyte responses in a host.

Such compositions may also comprise buffers (*e.g.*, neutral buffered saline or phosphate buffered saline), carbohydrates (*e.g.*, glucose, mannose, sucrose or dextrans), mannitol, proteins, polypeptides or amino acids such as glycine, antioxidants, bacteriostats, chelating agents such as EDTA or glutathione, adjuvants (*e.g.*, aluminum hydroxide), solutes that render the formulation isotonic, hypotonic or weakly hypertonic with the blood of a recipient, suspending agents, thickening agents and/or preservatives. Alternatively, compositions of the present invention may be formulated as a lyophilizate. Compounds may also be encapsulated within liposomes using well known technology.

Any of a variety of immunostimulants may be employed in the vaccines of this invention. For example, an adjuvant may be included. Most adjuvants contain a substance designed to protect the antigen from rapid catabolism, such as aluminum hydroxide or mineral oil, and a stimulator of immune responses, such as lipid A, *Bortadella pertussis* or *Mycobacterium tuberculosis* derived proteins. Suitable adjuvants are commercially available as, for example, Freund's Incomplete Adjuvant and Complete Adjuvant (Difco Laboratories, Detroit, MI); Merck Adjuvant 65 (Merck and Company, Inc., Rahway, NJ); AS-2 (SmithKline Beecham, Philadelphia, PA);

aluminum salts such as aluminum hydroxide gel (alum) or aluminum phosphate; salts of calcium, iron or zinc; an insoluble suspension of acylated tyrosine; acylated sugars; cationically or anionically derivatized polysaccharides; polyphosphazenes; biodegradable microspheres; monophosphoryl lipid A and quil A. Cytokines, such as GM-CSF or interleukin-2, -7, or -12, may also be used as adjuvants.

Within the vaccines provided herein, the adjuvant composition is preferably designed to induce an immune response predominantly of the Th1 type. High levels of Th1-type cytokines (*e.g.*, IFN-γ, TNFα, IL-2 and IL-12) tend to favor the induction of cell mediated immune responses to an administered antigen. In contrast, high levels of Th2-type cytokines (*e.g.*, IL-4, IL-5, IL-6 and IL-10) tend to favor the induction of humoral immune responses. Following application of a vaccine as provided herein, a patient will support an immune response that includes Th1- and Th2-type responses. Within a preferred embodiment, in which a response is predominantly Th1-type, the level of Th1-type cytokines will increase to a greater extent than the level of Th2-type cytokines. The levels of these cytokines may be readily assessed using standard assays. For a review of the families of cytokines, see Mosmann and Coffman, *Ann. Rev. Immunol.* 7:145-173, 1989.

Preferred adjuvants for use in eliciting a predominantly Th1-type response include, for example, a combination of monophosphoryl lipid A, preferably 3-de-O-acylated monophosphoryl lipid A (3D-MPL), together with an aluminum salt. MPL adjuvants are available from Corixa Corporation (Seattle, WA; *see* US Patent Nos. 4,436,727; 4,877,611; 4,866,034 and 4,912,094). CpG-containing oligonucleotides (in which the CpG dinucleotide is unmethylated) also induce a predominantly Th1 response. Such oligonucleotides are well known and are described, for example, in WO 96/02555, WO 99/33488 and U.S. Patent Nos. 6,008,200 and 5,856,462. Immunostimulatory DNA sequences are also described, for example, by Sato *et al.*, *Science 273*:352, 1996. Another preferred adjuvant is a saponin, preferably QS21 (Aquila Biopharmaceuticals Inc., Framingham, MA), which may be used alone or in combination with other adjuvants. For example, an enhanced system involves the combination of a monophosphoryl lipid A and saponin derivative, such as the combination of QS21 and 3D-MPL as described in WO 94/00153, or a less reactogenic composition where the QS21 is quenched with cholesterol, as described in WO

96/33739. Other preferred formulations comprise an oil-in-water emulsion and tocopherol. A particularly potent adjuvant formulation involving QS21, 3D-MPL and tocopherol in an oil-in-water emulsion is described in WO 95/17210.

Other preferred adjuvants include Montanide ISA 720 (Seppic, France), SAF (Chiron, California, United States), ISCOMS (CSL), MF-59 (Chiron), the SBAS series of adjuvants (*e.g.*, SBAS-2 or SBAS-4, available from SmithKline Beecham, Rixensart, Belgium), Detox (Corixa, Hamilton, MT), RC-529 (Corixa, Hamilton, MT) and other aminoalkyl glucosaminide 4-phosphates (AGPs), such as those described in pending U.S. Patent Application Serial Nos. 08/853,826 and 09/074,720, the disclosures of which are incorporated herein by reference in their entireties.

Any vaccine provided herein may be prepared using well known methods that result in a combination of antigen, immune response enhancer and a suitable carrier or excipient. The compositions described herein may be administered as part of a sustained release formulation (*i.e.*, a formulation such as a capsule, sponge or gel (composed of polysaccharides, for example) that effects a slow release of compound following administration). Such formulations may generally be prepared using well known technology (*see, e.g.*, Coombes *et al.*, *Vaccine 14*:1429-1438, 1996) and administered by, for example, oral, rectal or subcutaneous implantation, or by implantation at the desired target site. Sustained-release formulations may contain a polypeptide, polynucleotide or antibody dispersed in a carrier matrix and/or contained within a reservoir surrounded by a rate controlling membrane.

Carriers for use within such formulations are biocompatible, and may also be biodegradable; preferably the formulation provides a relatively constant level of active component release. Such carriers include microparticles of poly(lactide-co-glycolide), polyacrylate, latex, starch, cellulose, dextran and the like. Other delayed-release carriers include supramolecular biovectors, which comprise a non-liquid hydrophilic core (*e.g.*, a cross-linked polysaccharide or oligosaccharide) and, optionally, an external layer comprising an amphiphilic compound, such as a phospholipid (*see e.g.*, U.S. Patent No. 5,151,254 and PCT applications WO 94/20078, WO/94/23701 and WO 96/06638). The amount of active compound contained within a sustained release formulation depends upon the site of implantation, the rate and expected duration of release and the nature of the condition to be treated or prevented.

Any of a variety of delivery vehicles may be employed within pharmaceutical compositions and vaccines to facilitate production of an antigen-specific immune response that targets tumor cells. Delivery vehicles include antigen presenting cells (APCs), such as dendritic cells, macrophages, B cells, monocytes and other cells that may be engineered to be efficient APCs. Such cells may, but need not, be genetically modified to increase the capacity for presenting the antigen, to improve activation and/or maintenance of the T cell response, to have anti-tumor effects *per se* and/or to be immunologically compatible with the receiver (*i.e.*, matched HLA haplotype). APCs may generally be isolated from any of a variety of biological fluids and organs, including tumor and peritumoral tissues, and may be autologous, allogeneic, syngeneic or xenogeneic cells.

Certain preferred embodiments of the present invention use dendritic cells or progenitors thereof as antigen-presenting cells. Dendritic cells are highly potent APCs (Banchereau and Steinman, *Nature 392*:245-251, 1998) and have been shown to be effective as a physiological adjuvant for eliciting prophylactic or therapeutic antitumor immunity (*see* Timmerman and Levy, *Ann. Rev. Med. 50*:507-529, 1999). In general, dendritic cells may be identified based on their typical shape (stellate *in situ*, with marked cytoplasmic processes (dendrites) visible *in vitro*), their ability to take up, process and present antigens with high efficiency and their ability to activate naïve T cell responses. Dendritic cells may, of course, be engineered to express specific cell-surface receptors or ligands that are not commonly found on dendritic cells *in vivo* or *ex vivo*, and such modified dendritic cells are contemplated by the present invention. As an alternative to dendritic cells, secreted vesicles antigen-loaded dendritic cells (called exosomes) may be used within a vaccine (*see* Zitvogel *et al.*, *Nature Med. 4*:594-600, 1998).

Dendritic cells and progenitors may be obtained from peripheral blood, bone marrow, tumor-infiltrating cells, peritumoral tissues-infiltrating cells, lymph nodes, spleen, skin, umbilical cord blood or any other suitable tissue or fluid. For example, dendritic cells may be differentiated *ex vivo* by adding a combination of cytokines such as GM-CSF, IL-4, IL-13 and/or TNFα to cultures of monocytes harvested from peripheral blood. Alternatively, CD34 positive cells harvested from peripheral blood, umbilical cord blood or bone marrow may be differentiated into

dendritic cells by adding to the culture medium combinations of GM-CSF, IL-3, TNFα, CD40 ligand, LPS, flt3 ligand and/or other compound(s) that induce differentiation, maturation and proliferation of dendritic cells.

Dendritic cells are conveniently categorized as "immature" and "mature" cells, which allows a simple way to discriminate between two well characterized phenotypes. However, this nomenclature should not be construed to exclude all possible intermediate stages of differentiation. Immature dendritic cells are characterized as APC with a high capacity for antigen uptake and processing, which correlates with the high expression of Fcγ receptor and mannose receptor. The mature phenotype is typically characterized by a lower expression of these markers, but a high expression of cell surface molecules responsible for T cell activation such as class I and class II MHC, adhesion molecules (*e.g.*, CD54 and CD11) and costimulatory molecules (*e.g.*, CD40, CD80, CD86 and 4-1BB).

APCs may generally be transfected with a polynucleotide encoding an ovarian tumor protein (or portion or other variant thereof) such that the ovarian tumor polypeptide, or an immunogenic portion thereof, is expressed on the cell surface. Such transfection may take place *ex vivo*, and a composition or vaccine comprising such transfected cells may then be used for therapeutic purposes, as described herein. Alternatively, a gene delivery vehicle that targets a dendritic or other antigen presenting cell may be administered to a patient, resulting in transfection that occurs *in vivo*. *In vivo* and *ex vivo* transfection of dendritic cells, for example, may generally be performed using any methods known in the art, such as those described in WO 97/24447, or the gene gun approach described by Mahvi *et al.*, *Immunology and cell Biology* 75:456-460, 1997. Antigen loading of dendritic cells may be achieved by incubating dendritic cells or progenitor cells with the ovarian tumor polypeptide, DNA (naked or within a plasmid vector) or RNA; or with antigen-expressing recombinant bacterium or viruses (*e.g.*, vaccinia, fowlpox, adenovirus or lentivirus vectors). Prior to loading, the polypeptide may be covalently conjugated to an immunological partner that provides T cell help (*e.g.*, a carrier molecule). Alternatively, a dendritic cell may be pulsed with a non-conjugated immunological partner, separately or in the presence of the polypeptide.

Vaccines and pharmaceutical compositions may be presented in unit-dose or multi-dose containers, such as sealed ampoules or vials. Such containers are preferably hermetically sealed to preserve sterility of the formulation until use. In general, formulations may be stored as suspensions, solutions or emulsions in oily or aqueous vehicles. Alternatively, a vaccine or pharmaceutical composition may be stored in a freeze-dried condition requiring only the addition of a sterile liquid carrier immediately prior to use.

CANCER THERAPY

In further aspects of the present invention, the compositions described herein may be used for immunotherapy of cancer, such as ovarian cancer. Within such methods, pharmaceutical compositions and vaccines are typically administered to a patient. As used herein, a "patient" refers to any warm-blooded animal, preferably a human. A patient may or may not be afflicted with cancer. Accordingly, the above pharmaceutical compositions and vaccines may be used to prevent the development of a cancer or to treat a patient afflicted with a cancer. A cancer may be diagnosed using criteria generally accepted in the art, including the presence of a malignant tumor. Pharmaceutical compositions and vaccines may be administered either prior to or following surgical removal of primary tumors and/or treatment such as administration of radiotherapy or conventional chemotherapeutic drugs. Administration may be by any suitable method, including administration by intravenous, intraperitoneal, intramuscular, subcutaneous, intranasal, intradermal, anal, vaginal, topical and oral routes.

Within certain embodiments, immunotherapy may be active immunotherapy, in which treatment relies on the *in vivo* stimulation of the endogenous host immune system to react against tumors with the administration of immune response-modifying agents (such as polypeptides and polynucleotides as provided herein).

Within other embodiments, immunotherapy may be passive immunotherapy, in which treatment involves the delivery of agents with established tumor-immune reactivity (such as effector cells or antibodies) that can directly or indirectly mediate antitumor effects and does not necessarily depend on an intact host

immune system. Examples of effector cells include T cells as discussed above, T lymphocytes (such as $CD8^+$ cytotoxic T lymphocytes and $CD4^+$ T-helper tumor-infiltrating lymphocytes), killer cells (such as Natural Killer cells and lymphokine-activated killer cells), B cells and antigen-presenting cells (such as dendritic cells and macrophages) expressing a polypeptide provided herein. T cell receptors and antibody receptors specific for the polypeptides recited herein may be cloned, expressed and transferred into other vectors or effector cells for adoptive immunotherapy. The polypeptides provided herein may also be used to generate antibodies or anti-idiotypic antibodies (as described above and in U.S. Patent No. 4,918,164) for passive immunotherapy.

Effector cells may generally be obtained in sufficient quantities for adoptive immunotherapy by growth *in vitro*, as described herein. Culture conditions for expanding single antigen-specific effector cells to several billion in number with retention of antigen recognition *in vivo* are well known in the art. Such *in vitro* culture conditions typically use intermittent stimulation with antigen, often in the presence of cytokines (such as IL-2) and non-dividing feeder cells. As noted above, immunoreactive polypeptides as provided herein may be used to rapidly expand antigen-specific T cell cultures in order to generate a sufficient number of cells for immunotherapy. In particular, antigen-presenting cells, such as dendritic, macrophage, monocyte, fibroblast and/or B cells, may be pulsed with immunoreactive polypeptides or transfected with one or more polynucleotides using standard techniques well known in the art. For example, antigen-presenting cells can be transfected with a polynucleotide having a promoter appropriate for increasing expression in a recombinant virus or other expression system. Cultured effector cells for use in therapy must be able to grow and distribute widely, and to survive long term *in vivo*. Studies have shown that cultured effector cells can be induced to grow in vivo and to survive long term in substantial numbers by repeated stimulation with antigen supplemented with IL-2 (*see*, for example, Cheever *et al.*, *Immunological Reviews 157*:177, 1997).

Alternatively, a vector expressing a polypeptide recited herein may be introduced into antigen presenting cells taken from a patient and clonally propagated *ex vivo* for transplant back into the same patient. Transfected cells may be reintroduced

into the patient using any means known in the art, preferably in sterile form by intravenous, intracavitary, intraperitoneal or intratumor administration.

Routes and frequency of administration of the therapeutic compositions described herein, as well as dosage, will vary from individual to individual, and may be readily established using standard techniques. In general, the pharmaceutical compositions and vaccines may be administered by injection (*e.g.*, intracutaneous, intramuscular, intravenous or subcutaneous), intranasally (*e.g.*, by aspiration) or orally. Preferably, between 1 and 10 doses may be administered over a 52 week period. Preferably, 6 doses are administered, at intervals of 1 month, and booster vaccinations may be given periodically thereafter. Alternate protocols may be appropriate for individual patients. A suitable dose is an amount of a compound that, when administered as described above, is capable of promoting an anti-tumor immune response, and is at least 10-50% above the basal (*i.e.*, untreated) level. Such response can be monitored by measuring the anti-tumor antibodies in a patient or by vaccine-dependent generation of cytolytic effector cells capable of killing the patient's tumor cells *in vitro*. Such vaccines should also be capable of causing an immune response that leads to an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial or longer disease-free survival) in vaccinated patients as compared to non-vaccinated patients. In general, for pharmaceutical compositions and vaccines comprising one or more polypeptides, the amount of each polypeptide present in a dose ranges from about 25 μg to 5 mg per kg of host. Suitable dose sizes will vary with the size of the patient, but will typically range from about 0.1 mL to about 5 mL.

In general, an appropriate dosage and treatment regimen provides the active compound(s) in an amount sufficient to provide therapeutic and/or prophylactic benefit. Such a response can be monitored by establishing an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial, or longer disease-free survival) in treated patients as compared to non-treated patients. Increases in preexisting immune responses to an ovarian tumor protein generally correlate with an improved clinical outcome. Such immune responses may generally be evaluated using standard proliferation, cytotoxicity or cytokine assays, which may be performed using samples obtained from a patient before and after treatment.

CANCER DETECTION AND DIAGNOSIS

In general, a cancer may be detected in a patient based on the presence of one or more ovarian tumor proteins and/or polynucleotides encoding such proteins in a biological sample (for example, blood, sera, sputum urine and/or tumor biopsies) obtained from the patient. In other words, such proteins may be used as markers to indicate the presence or absence of a cancer such as ovarian cancer. In addition, such proteins may be useful for the detection of other cancers. The binding agents provided herein generally permit detection of the level of antigen that binds to the agent in the biological sample. Polynucleotide primers and probes may be used to detect the level of mRNA encoding a tumor protein, which is also indicative of the presence or absence of a cancer. In general, an ovarian tumor sequence should be present at a level that is at least three fold higher in tumor tissue than in normal tissue

There are a variety of assay formats known to those of ordinary skill in the art for using a binding agent to detect polypeptide markers in a sample. *See, e.g.*, Harlow and Lane, *Antibodies: A Laboratory Manual,* Cold Spring Harbor Laboratory, 1988. In general, the presence or absence of a cancer in a patient may be determined by (a) contacting a biological sample obtained from a patient with a binding agent; (b) detecting in the sample a level of polypeptide that binds to the binding agent; and (c) comparing the level of polypeptide with a predetermined cut-off value.

In a preferred embodiment, the assay involves the use of binding agent immobilized on a solid support to bind to and remove the polypeptide from the remainder of the sample. The bound polypeptide may then be detected using a detection reagent that contains a reporter group and specifically binds to the binding agent/polypeptide complex. Such detection reagents may comprise, for example, a binding agent that specifically binds to the polypeptide or an antibody or other agent that specifically binds to the binding agent, such as an anti-immunoglobulin, protein G, protein A or a lectin. Alternatively, a competitive assay may be utilized, in which a polypeptide is labeled with a reporter group and allowed to bind to the immobilized binding agent after incubation of the binding agent with the sample. The extent to which components of the sample inhibit the binding of the labeled polypeptide to the binding agent is indicative of the reactivity of the sample with the immobilized binding agent. Suitable polypeptides for use within such assays include full length ovarian

tumor proteins and portions thereof to which the binding agent binds, as described above.

The solid support may be any material known to those of ordinary skill in the art to which the tumor protein may be attached. For example, the solid support may be a test well in a microtiter plate or a nitrocellulose or other suitable membrane. Alternatively, the support may be a bead or disc, such as glass, fiberglass, latex or a plastic material such as polystyrene or polyvinylchloride. The support may also be a magnetic particle or a fiber optic sensor, such as those disclosed, for example, in U.S. Patent No. 5,359,681. The binding agent may be immobilized on the solid support using a variety of techniques known to those of skill in the art, which are amply described in the patent and scientific literature. In the context of the present invention, the term "immobilization" refers to both noncovalent association, such as adsorption, and covalent attachment (which may be a direct linkage between the agent and functional groups on the support or may be a linkage by way of a cross-linking agent). Immobilization by adsorption to a well in a microtiter plate or to a membrane is preferred. In such cases, adsorption may be achieved by contacting the binding agent, in a suitable buffer, with the solid support for a suitable amount of time. The contact time varies with temperature, but is typically between about 1 hour and about 1 day. In general, contacting a well of a plastic microtiter plate (such as polystyrene or polyvinylchloride) with an amount of binding agent ranging from about 10 ng to about 10 μg, and preferably about 100 ng to about 1 μg, is sufficient to immobilize an adequate amount of binding agent.

Covalent attachment of binding agent to a solid support may generally be achieved by first reacting the support with a bifunctional reagent that will react with both the support and a functional group, such as a hydroxyl or amino group, on the binding agent. For example, the binding agent may be covalently attached to supports having an appropriate polymer coating using benzoquinone or by condensation of an aldehyde group on the support with an amine and an active hydrogen on the binding partner (*see, e.g.*, Pierce Immunotechnology Catalog and Handbook, 1991, at A12-A13).

In certain embodiments, the assay is a two-antibody sandwich assay. This assay may be performed by first contacting an antibody that has been immobilized

on a solid support, commonly the well of a microtiter plate, with the sample, such that polypeptides within the sample are allowed to bind to the immobilized antibody. Unbound sample is then removed from the immobilized polypeptide-antibody complexes and a detection reagent (preferably a second antibody capable of binding to a different site on the polypeptide) containing a reporter group is added. The amount of detection reagent that remains bound to the solid support is then determined using a method appropriate for the specific reporter group.

More specifically, once the antibody is immobilized on the support as described above, the remaining protein binding sites on the support are typically blocked. Any suitable blocking agent known to those of ordinary skill in the art, such as bovine serum albumin or Tween 20™ (Sigma Chemical Co., St. Louis, MO). The immobilized antibody is then incubated with the sample, and polypeptide is allowed to bind to the antibody. The sample may be diluted with a suitable diluent, such as phosphate-buffered saline (PBS) prior to incubation. In general, an appropriate contact time (*i.e.*, incubation time) is a period of time that is sufficient to detect the presence of polypeptide within a sample obtained from an individual with ovarian cancer. Preferably, the contact time is sufficient to achieve a level of binding that is at least about 95% of that achieved at equilibrium between bound and unbound polypeptide. Those of ordinary skill in the art will recognize that the time necessary to achieve equilibrium may be readily determined by assaying the level of binding that occurs over a period of time. At room temperature, an incubation time of about 30 minutes is generally sufficient.

Unbound sample may then be removed by washing the solid support with an appropriate buffer, such as PBS containing 0.1% Tween 20™. The second antibody, which contains a reporter group, may then be added to the solid support. Preferred reporter groups include those groups recited above.

The detection reagent is then incubated with the immobilized antibody-polypeptide complex for an amount of time sufficient to detect the bound polypeptide. An appropriate amount of time may generally be determined by assaying the level of binding that occurs over a period of time. Unbound detection reagent is then removed and bound detection reagent is detected using the reporter group. The method employed for detecting the reporter group depends upon the nature of the reporter

group. For radioactive groups, scintillation counting or autoradiographic methods are generally appropriate. Spectroscopic methods may be used to detect dyes, luminescent groups and fluorescent groups. Biotin may be detected using avidin, coupled to a different reporter group (commonly a radioactive or fluorescent group or an enzyme). Enzyme reporter groups may generally be detected by the addition of substrate (generally for a specific period of time), followed by spectroscopic or other analysis of the reaction products.

To determine the presence or absence of a cancer, such as ovarian cancer, the signal detected from the reporter group that remains bound to the solid support is generally compared to a signal that corresponds to a predetermined cut-off value. In one preferred embodiment, the cut-off value for the detection of a cancer is the average mean signal obtained when the immobilized antibody is incubated with samples from patients without the cancer. In general, a sample generating a signal that is three standard deviations above the predetermined cut-off value is considered positive for the cancer. In an alternate preferred embodiment, the cut-off value is determined using a Receiver Operator Curve, according to the method of Sackett *et al.*, *Clinical Epidemiology: A Basic Science for Clinical Medicine*, Little Brown and Co., 1985, p. 106-7. Briefly, in this embodiment, the cut-off value may be determined from a plot of pairs of true positive rates (*i.e.*, sensitivity) and false positive rates (100%-specificity) that correspond to each possible cut-off value for the diagnostic test result. The cut-off value on the plot that is the closest to the upper left-hand corner (*i.e.*, the value that encloses the largest area) is the most accurate cut-off value, and a sample generating a signal that is higher than the cut-off value determined by this method may be considered positive. Alternatively, the cut-off value may be shifted to the left along the plot, to minimize the false positive rate, or to the right, to minimize the false negative rate. In general, a sample generating a signal that is higher than the cut-off value determined by this method is considered positive for a cancer.

In a related embodiment, the assay is performed in a flow-through or strip test format, wherein the binding agent is immobilized on a membrane, such as nitrocellulose. In the flow-through test, polypeptides within the sample bind to the immobilized binding agent as the sample passes through the membrane. A second, labeled binding agent then binds to the binding agent-polypeptide complex as a solution

containing the second binding agent flows through the membrane. The detection of bound second binding agent may then be performed as described above. In the strip test format, one end of the membrane to which binding agent is bound is immersed in a solution containing the sample. The sample migrates along the membrane through a region containing second binding agent and to the area of immobilized binding agent. Concentration of second binding agent at the area of immobilized antibody indicates the presence of a cancer. Typically, the concentration of second binding agent at that site generates a pattern, such as a line, that can be read visually. The absence of such a pattern indicates a negative result. In general, the amount of binding agent immobilized on the membrane is selected to generate a visually discernible pattern when the biological sample contains a level of polypeptide that would be sufficient to generate a positive signal in the two-antibody sandwich assay, in the format discussed above. Preferred binding agents for use in such assays are antibodies and antigen-binding fragments thereof. Preferably, the amount of antibody immobilized on the membrane ranges from about 25 ng to about 1 μg, and more preferably from about 50 ng to about 500 ng. Such tests can typically be performed with a very small amount of biological sample.

Of course, numerous other assay protocols exist that are suitable for use with the tumor proteins or binding agents of the present invention. The above descriptions are intended to be exemplary only. For example, it will be apparent to those of ordinary skill in the art that the above protocols may be readily modified to use ovarian tumor polypeptides to detect antibodies that bind to such polypeptides in a biological sample. The detection of such ovarian tumor protein specific antibodies may correlate with the presence of a cancer.

A cancer may also, or alternatively, be detected based on the presence of T cells that specifically react with an ovarian tumor protein in a biological sample. Within certain methods, a biological sample comprising $CD4^+$ and/or $CD8^+$ T cells isolated from a patient is incubated with an ovarian tumor polypeptide, a polynucleotide encoding such a polypeptide and/or an APC that expresses at least an immunogenic portion of such a polypeptide, and the presence or absence of specific activation of the T cells is detected. Suitable biological samples include, but are not limited to, isolated T cells. For example, T cells may be isolated from a patient by routine techniques (such

as by Ficoll/Hypaque density gradient centrifugation of peripheral blood lymphocytes). T cells may be incubated *in vitro* for 2-9 days (typically 4 days) at 37°C with polypeptide (*e.g.*, 5 - 25 μg/ml). It may be desirable to incubate another aliquot of a T cell sample in the absence of ovarian tumor polypeptide to serve as a control. For $CD4^+$ T cells, activation is preferably detected by evaluating proliferation of the T cells. For $CD8^+$ T cells, activation is preferably detected by evaluating cytolytic activity. A level of proliferation that is at least two fold greater and/or a level of cytolytic activity that is at least 20% greater than in disease-free patients indicates the presence of a cancer in the patient.

As noted above, a cancer may also, or alternatively, be detected based on the level of mRNA encoding an ovarian tumor protein in a biological sample. For example, at least two oligonucleotide primers may be employed in a polymerase chain reaction (PCR) based assay to amplify a portion of an ovarian tumor cDNA derived from a biological sample, wherein at least one of the oligonucleotide primers is specific for (*i.e.*, hybridizes to) a polynucleotide encoding the ovarian tumor protein. The amplified cDNA is then separated and detected using techniques well known in the art, such as gel electrophoresis. Similarly, oligonucleotide probes that specifically hybridize to a polynucleotide encoding an ovarian tumor protein may be used in a hybridization assay to detect the presence of polynucleotide encoding the tumor protein in a biological sample.

To permit hybridization under assay conditions, oligonucleotide primers and probes should comprise an oligonucleotide sequence that has at least about 60%, preferably at least about 75% and more preferably at least about 90%, identity to a portion of a polynucleotide encoding an ovarian tumor protein that is at least 10 nucleotides, and preferably at least 20 nucleotides, in length. Preferably, oligonucleotide primers and/or probes hybridize to a polynucleotide encoding a polypeptide described herein under moderately stringent conditions, as defined above. Oligonucleotide primers and/or probes which may be usefully employed in the diagnostic methods described herein preferably are at least 10-40 nucleotides in length. In a preferred embodiment, the oligonucleotide primers comprise at least 10 contiguous nucleotides, more preferably at least 15 contiguous nucleotides, of a DNA molecule having a sequence recited in SEQ ID NOs:1-222. Techniques for both PCR based

assays and hybridization assays are well known in the art (*see*, for example, Mullis *et al.*, *Cold Spring Harbor Symp. Quant. Biol.*, *51*:263, 1987; Erlich ed., *PCR Technology*, Stockton Press, NY, 1989).

One preferred assay employs RT-PCR, in which PCR is applied in conjunction with reverse transcription. Typically, RNA is extracted from a biological sample, such as biopsy tissue, and is reverse transcribed to produce cDNA molecules. PCR amplification using at least one specific primer generates a cDNA molecule, which may be separated and visualized using, for example, gel electrophoresis. Amplification may be performed on biological samples taken from a test patient and from an individual who is not afflicted with a cancer. The amplification reaction may be performed on several dilutions of cDNA spanning two orders of magnitude. A two-fold or greater increase in expression in several dilutions of the test patient sample as compared to the same dilutions of the non-cancerous sample is typically considered positive.

In another embodiment, the compositions described herein may be used as markers for the progression of cancer. In this embodiment, assays as described above for the diagnosis of a cancer may be performed over time, and the change in the level of reactive polypeptide(s) or polynucleotide(s) evaluated. For example, the assays may be performed every 24-72 hours for a period of 6 months to 1 year, and thereafter performed as needed. In general, a cancer is progressing in those patients in whom the level of polypeptide or polynucleotide detected increases over time. In contrast, the cancer is not progressing when the level of reactive polypeptide or polynucleotide either remains constant or decreases with time.

Certain *in vivo* diagnostic assays may be performed directly on a tumor. One such assay involves contacting tumor cells with a binding agent. The bound binding agent may then be detected directly or indirectly via a reporter group. Such binding agents may also be used in histological applications. Alternatively, polynucleotide probes may be used within such applications.

As noted above, to improve sensitivity, multiple ovarian tumor protein markers may be assayed within a given sample. It will be apparent that binding agents specific for different proteins provided herein may be combined within a single assay. Further, multiple primers or probes may be used concurrently. The selection of tumor

protein markers may be based on routine experiments to determine combinations that results in optimal sensitivity. In addition, or alternatively, assays for tumor proteins provided herein may be combined with assays for other known tumor antigens.

DIAGNOSTIC KITS

The present invention further provides kits for use within any of the above diagnostic methods. Such kits typically comprise two or more components necessary for performing a diagnostic assay. Components may be compounds, reagents, containers and/or equipment. For example, one container within a kit may contain a monoclonal antibody or fragment thereof that specifically binds to an ovarian tumor protein. Such antibodies or fragments may be provided attached to a support material, as described above. One or more additional containers may enclose elements, such as reagents or buffers, to be used in the assay. Such kits may also, or alternatively, contain a detection reagent as described above that contains a reporter group suitable for direct or indirect detection of antibody binding.

Alternatively, a kit may be designed to detect the level of mRNA encoding an ovarian tumor protein in a biological sample. Such kits generally comprise at least one oligonucleotide probe or primer, as described above, that hybridizes to a polynucleotide encoding an ovarian tumor protein. Such an oligonucleotide may be used, for example, within a PCR or hybridization assay. Additional components that may be present within such kits include a second oligonucleotide and/or a diagnostic reagent or container to facilitate the detection of a polynucleotide encoding an ovarian tumor protein.

The following Examples are offered by way of illustration and not by way of limitation.

EXAMPLE 1

IDENTIFICATION OF CDNAS ENCODING OVARIAN AND ENDOMETRIAL TUMOR PROTEINS

An ovarian/endometrial tumor cell line subtracted library was constructed. A library was prepared from endometrial and ovarian tumor cell lines: EndoTL 391-73 (100% undifferentiated endometrial carcinoma), OTL 298-95 (100% moderately differentiated papillary serous ovarian adenocarcinoma) and OTL 522-24 (30% mesothelial cells/70% poorly differentiated metastatic ovarian adenocarcinoma). This library was subtracted with liver, pancreas, skin, bone marrow, resting PBMC, stomach, and brain cDNA and spiked with eukaryotic elongation factor 1α. Resulting cDNA was cloned into the pcDNA3.1(+) (Invitrogen) vector to generate the ovarian tumor cell line subtraction 4 library (OTCLS4). The OTCLS4 library contained 117,200 clones (background 58,400), with a 1333 bp average insert size (inserts ranged from 200 to 5650 bp).

Thirty clones were sequenced. Of these 12 were full length. The clones may be grouped as follows (SEQ ID NOs are provided in Table 2):

7 Novel

4 Homo sapiens aldehyde dehydrogenase 6 (ALDH6) mRNA

3 Human ferritin heavy chain mRNA, complete cds

2 Human lysyl oxidase gene, partial cds

2 Human mitochondrion, complete genome

1 Homo sapiens aldehyde reductase 1 (low Km aldose reductase) ALDR1) mRNA

1 Homo sapiens chromosome 11q12.2 PAC clone pDJ519o13

1 Homo sapiens chromosome-associated polypeptide C (CAP-C) mRNA

1 Homo sapiens clone 24452 mRNA sequence

1 Homo sapiens dipeptidylpeptidase IV (CD26, adenosine deaminase complexing protein 2) (DPP4 mRNA)

1 Homo sapiens guanine nucleotide binding protein (G protein), beta polypeptide 2-like 1 (GNB2L1), mRNA

1 Homo sapiens heat shock 27kD protein 1 (HSPB1) mRNA

1 Homo sapiens homeo box B2 (HOXB2) mRNA

1 Homo sapiens mRNA for KIAA0865 protein, partial cds

1 Homo sapiens mRNA; cDNA DKFZp564A2416 (from clone DKFZp564A2416)

1 Homo sapiens NADH-ubiquinone oxidoreductase 39kDA subunit mRNA, nuclear gene encoding mitochondrial protein, complete cds

1 Homo sapiens Sk/Dkk-1 protein precursor, mRNA, complete cds

1 Homo sapiens sodium channel, nonvoltage-gated 1 alpha (SCNN1A) mRNA

1 Homo sapiens SRP1 mRNA, partial sequence

1 Homo sapiens zinc finger protein SLUG (SLUG) gene, complete cds

1 Human 28S ribosomal RNA gene

1 Human cofilin mRNA, partial cds

1 Human DNA sequence from clone 967N21 on chromosome 20p12.3-13

1 Human fibroblast collagenase inhibitor mRNA, complete cds

1 Human fibroblast mRNA for aldolase A

1 Human HepG2 3' region MboI cDNA, clone hmd6a06m3

1 Human MAP kinase kinase MEK5c mRNA, complete cds

1 Human mRNA for coupling protein G(s) alpha-subunit (alpha-S1)

1 Human mRNA for KIAA0026 gene, completecds|gi|4808630|gb|AF100620.1| AF100620 Homo sapiens transcription factor-like protein MRGX (MRGX) mRNA, complete cds

1 Human mRNA for KIAA0064 gene, complete cds

1 Human mRNA for KIAA0204 gene, complete cds

1 Human plasminogen activator inhibitor-1 (PAI-1) mRNA, complete cds

1 Human protocadherin 43 mRNA, 3' end of cds for alternative splicing PC43-12

1 Human putative RNA binding protein Koc1 mRNA, complete cds

1 Human TCB gene encoding cytosolic thyroid hormone-binding protein, complete cds

1 Human ubiquitin-homology domain protein PIC1 mRNA, complete cds

Table 2

Ovarian/Endometrial Carcinoma Associated cDNA Sequences

Sequence	SEQ ID NO	Comments
32609	36	*Homo sapiens* aldehyde dehydrogenase 6 (ALDH6) mRNA
32515	4	*Homo sapiens* aldehyde reductase 1 (low Km aldose reductase) (ALDR1) mRNA
32562	29	*Homo sapiens* Chromosome 11q12.2 PAC clone pDJ519o13
32523	9	*Homo sapiens* chromosome-associated polypeptide C (CAP-C) mRNA
32551	24	*Homo sapiens* clone 24452 mRNA sequence
32518	6	*Homo sapiens* dipeptidylpeptidase IV (CD26, adenosine deaminase complexing protein 2) (DPP4) mRNA
32534	13	*Homo sapiens* guanine nucleotide binding protein (G protein), beta polypeptide 2-like 1 (GNB2L1), mRNA
32507	2	*Homo sapiens* heat shock 27kD protein 1 (HSPB1) mRNA
32533	12	*Homo sapiens* homeo box B2 (HOXB2) mRNA
32565	20	*Homo sapiens* mRNA for KIAA0865 protein, partial cds
32553	19	*Homo sapiens* mRNA; cDNA DKFZp564A2416 (from clone DKFZp564A2416)
32561	28	*Homo sapiens* NADH-ubiquinone oxidoreductase 39kDa subunit mRNA, nuclear gene encoding mitochondrial protein, complete cds
32510	3	*Homo sapiens* Sk/Dkk-1 protein precursor, mRNA, complete cds
32546	16	*Homo sapiens* sodium channel, nonvoltage-gated 1 alpha (SCNN1A) mRNA
32559	27	*Homo sapiens* SRP1 mRNA, partial sequence
32506	1	*Homo sapiens* zinc finger protein SLUG gene, complete cds
32519	7	Human 28S ribosomal RNA gene
32602	22	Human cofilin mRNA, partial cds
32569	31	Human DNA sequence from clone 967N21 on chromosome 20p12.3-13
32525	10	Human ferritin heavy chain mRNA, complete cds
32557	26	Human fibroblast collagenase inhibitor mRNA, complete cds
32517	5	Human fibroblast mRNA for aldolase A
32568	30	Human HepG2 3' region MboI cDNA, clone hmd6a06m3
32548	17	Human lysyl oxidase gene, partial cds
32520	8	Human mitochondrion, complete genome
32617	23	Human mRNA for coupling protein G(s) alpha-subunit (alpha-S1)

32572	32	Human mRNA for KIAA0026 gene, complete cds|gi|4808630|gb|AF100620.1|AF100620 *Homo sapiens* transcription factor-like protein MRGX (MRGX) mRNA, complete cds
32600	21	Human mRNA for KIAA0064 gene, complete cds
32537	14	Human mRNA for KIAA0204 gene, complete cds
32552	25	Human plasminogen activator inhibitor-1 (PAI-1) mRNA, complete cds
32615	39	Human protocadherin 43 mRNA, 3' end of cds for alternative splicing PC43-12
32613	38	Human putative RNA binding protein Koc1 mRNA, complete cds
32610	37	Human TCB gene encoding cytosolic thyroid hormone-binding protein, complete cds
32539	15	Human ubiquitin-homology domain protein PIC1 mRNA, complete cds
32619	40	Novel
32576	33	Novel
32608	35	Novel
32607	34	Novel
32620	41	Novel
32550	18	Novel
32529	11	Novel

Using the methods outlined above, an additional 162 clones were isolated and sequenced. The cDNA sequences are shown in SEQ ID NO:42-203.

SEQ ID NO:204-209 represent additional clones from the OTCL S4 library. SEQ ID NO:206 (clone 57881), 208 (clone 57884), 107 (clone R0199:A07) and 80 (clone R0198:F02) represent novel sequences. The remaining sequences are shown in Table 3, which includes additional results from homology searches.

Table 3

Sequence	SEQ ID NO	Comments
57877	204	H. Sapiens novel gene from PAC 117P20, chromosome 1
57879	205	Urokinase plasmingen activator surface receptor (uPAR)
57882	207	Lysophospholipase 1 (LYPA1)
57888	209	IGF-II mRNA binding protein 3 (IMP-3) mRNA
R0198:H03	99	*Homo sapiens* laminin
R0199:B03	111	Human cyclin protein gene, complete cds
R0200:A12	158	*Homo sapiens* monocarboxylate transporter (MCT3) mRNA
R0199:C12	125	Unigene: Hs93379
R0200:A10	157	Human mRNA for KIAA0101 gene, complete cds
R0198:D01	61	Unigene: Hs42116
R0200:C02	164	Human proliferating cell nuclear antigen (PCNA) gene
R0200:G02	193	*Homo sapiens* Xq28 BAC RP5–1014016

EXAMPLE 2

ANALYSIS OF cDNA EXPRESSION USING MICROARRAY TECHNOLOGY

In additional studies, sequences disclosed herein were found to be overexpressed in specific tumor tissues as determined by microarray analysis. Using this approach, cDNA sequences are PCR amplified and their mRNA expression profiles in tumor and normal tissues are examined using cDNA microarray technology essentially as described (Shena *et al.*, 1995). In brief, the clones are arrayed onto glass slides as multiple replicas, with each location corresponding to a unique cDNA clone (as many as 5500 clones can be arrayed on a single slide, or chip). Each chip is hybridized with a pair of cDNA probes that are fluorescence-labeled with Cy3 and Cy5, respectively. Typically, 1μg of polyA$^+$ RNA is used to generate each cDNA probe. After hybridization, the chips are scanned and the fluorescence intensity recorded for both Cy3 and Cy5 channels. There are multiple built-in quality control steps. First, the probe quality is monitored using a panel of ubiquitously expressed genes. Secondly, the control plate also can include yeast DNA fragments of which complementary RNA may be spiked into the probe synthesis for measuring the quality of the probe and the sensitivity of the analysis. Currently, the technology offers a sensitivity of 1 in 100,000

copies of mRNA. Finally, the reproducibility of this technology can be ensured by including duplicated control cDNA elements at different locations.

A total of 428 clones from the OCTLS4 library were analyzed on Ovarian Chip-3. The following table, Table 4, provides a list of probes used to interrogate these clones. A total of 16 clones were identified which showed at least 2-fold overexpression in ovarian tumors when compared to non-ovarian essential normal tissues and had a mean non-ovarian essential normal tissue expression of less than 0.2. These clones are represented by SEQ ID NO:204-209 and by SEQ ID NO:61, 99, 111, 125, 157, 158, 164 and 193.

Table 4

Tissue	Clone ID	Microarray ID	Tumor information
Ovarian tumor Adrenal gland normal	261A SPACT37	391cy3 391cy5	Stage IIIC
Ovary tumor Skin normal	264A 396A	392cy3 392cy5	Stage IIIC
Ovary tumor Thymus normal	265A SPACT56	393cy3 393cy5	Stage IIIC
Ovary tumor Bronchus normal	288A 600C	394cy3 394cy5	Stage IIIC
Ovary tumor	854A 785B	395cy3 395cy5	
Ovary tumor Bone normal	855A 407B	396cy3 396cy5	Grade III, Stage IA
Ovary tumor Peritoneum epithelium normal	856A 484A	397cy3 397cy5	Serous papillary
Ovary tumor Pituitary gland	603A SPACT52	398cy3 398cy5	Metastatic adenocarcinoma, Grade III, Stage III
Ovary tumor Skeletal muscle normal	857A SPACT40	399cy3 399cy5	Papillary serous cystadenocarcinoma Grade III, Stage IB
Ovary tumor Stomach normal	385A SPACT55	400cy3 400cy5	Papillary serous adenocarcinoma
Ovary tumor Spleen normal	392A SPACT54	401cy3 401cy5	Papillary serous neoplasm, Stage 1C
Ovary tumor Pancreas normal	858A 862A	402cy3 402cy5	Papillary serous cystadenocarcinoma Grade II-III, Stage IA

Ovary tumor Ovary normal	859A S27	403cy3 403cy5	Papillary serous adenocarcinoma Grade II-III, Stage IIB
Ovary tumor Spinal cord normal	605A SPACT45	404cy3 404cy5	Serous borderline tumor, stage IIIC
Ovary tumor Heart normal	495A SPAAm1	405cy3 405cy5	Papillary serous carcinoma, Grade II, Stage III
Ovary tumor Ovary normal	381C S7	414cy3 414cy5	Mucinous adenocarcinoma, Grade I, Sage IB
Ovary tumor Ovary normal	382A S449A	416cy3 416cy5	Mucinous adenocarcinoma
Ovary tumor metastases Small intestine normal	428B SPACT53	417cy3 417cy5	Mucinous adenocarcinoma
Ovary tumor Esophagus normal	491A 502B	418cy3 418cy5	Endometriod adenocarcinoma
Ovary tumor Colon normal	335A 199A	419cy3 419cy5	Endometriod adenocarcinoma Grade II, Stage II
Ovary tumor Thyroid gland normal	494A SPACT46	421cy3 421cy5	Adenocarcinoma Grade III, Stage II-III
Ovary tumor PBMC (resting)	860A 783A	42cy3 422cy5	Endometriod adenocarcinoma Grade II-III, Stage IIIC
Ovary tumor Aorta normal	604A 415A	423cy3 423cy5	Clear cell carcinoma
Ovary tumor Trachea normal	607A 776A	424cy3 424cy5	Clear cell, Stage IA
Ovary tumor Trachea normal	S25 CT25	425cy3 425cy5	Granulosa cell tumor, Stage IA
Ovary tumor Pancreas normal pool	S22 PAN2000	426cy3 426cy5	Granulosa cell tumor, Stage IA
Ovary tumor Breast (HMEC) normal	386A S92	427cy3 427cy5	Germ cell tumor, Stage I
Ovary tumor Bladder normal	602A 328B/C	429cy3 429cy5	Papillary serous carcinoma, Grade III, Stage IIIB
Ovary tumor Bone marrow normal	S23 SPACT49	430cy3 430cy5	Papillary serous adenocarcinoma Grade III, Stage IIIC

Ovary tumor Lung normal	606A SPAAm2	428cy3 428cy5	Papillary serous cystadenocarcinoma Grade II, Stage IIIB
Ovary tumor metastases Kidney normal	383A 302B	431cy3 431cy5	Metastatic papillary adenocarcinoma, Grade III, Stage IIIA
Ovary tumor metastases PBMC (activated)	384A S40.782A	423cy3 423cy5	Papillary serous adenocarcinoma Grade II, Stage IIIB
Ovary tumor metastases Ovary tumor match with CY3	426A 603A	433cy3 433cy5	Papillary serous adenocarcinoma Grade III, Stage IIIB
Ovary tumor metastases Liver normal	429A 270B	434cy3 434cy5	Papillary adenocarcinoma Grade III, Stage III
Ovary tumor Brain normal	427A SPACT50	435cy3 435cy5	Papillary serous adenocarcinoma Grade III, Stage IIIC
Ovary tumor Bone normal	855A 407B	436cy3 436cy5	Grade III, Stage IA
Ovary tumor Spinal cord normal	605A SPACT45	437cy3 437cy5	Serous borderline tumor, Stage IIIC
Ovary tumor Heart normal	495A SPAAm1	438cy3 438cy5	Papillary serous carcinoma, GradeII, Stage III
Ovary tumor Ovary normal	381C S7	439cy3 439cy5	Mucnous adenocarcinoma, Grade I, Stage IB

EXAMPLE 3

SYNTHESIS OF POLYPEPTIDES

Polypeptides may be synthesized on a Perkin Elmer/Applied Biosystems Division 430A peptide synthesizer using FMOC chemistry with HPTU (O-Benzotriazole-N,N,N',N'-tetramethyluronium hexafluorophosphate) activation. A Gly-Cys-Gly sequence may be attached to the amino terminus of the peptide to provide a *method of conjugation, binding to an immobilized surface, or labeling of the peptide.* Cleavage of the peptides from the solid support may be carried out using the following cleavage mixture: trifluoroacetic acid:ethanedithiol:thioanisole:water:phenol (40:1:2:2:3). After cleaving for 2 hours, the peptides may be precipitated in cold methyl-t-butyl-ether. The peptide pellets may then be dissolved in water containing 0.1% trifluoroacetic acid (TFA) and lyophilized prior to purification by C18 reverse phase HPLC. A gradient of 0%-60% acetonitrile (containing 0.1% TFA) in water (containing 0.1% TFA) may be used to elute the peptides. Following lyophilization of the pure fractions, the peptides may be characterized using electrospray or other types of mass spectrometry and by amino acid analysis.

From the foregoing it will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the invention is not limited except as by the appended claims.

CLAIMS

What is claimed:

1. An isolated polynucleotide comprising a sequence selected from the group consisting of:

(a) sequences provided in SEQ ID NO: 1-222;

(b) complements of the sequences provided in SEQ ID NO: 1-222;

(c) sequences consisting of at least 20 contiguous residues of a sequence provided in SEQ ID NO: 1-222;

(d) sequences that hybridize to a sequence provided in SEQ ID NO: 1-222, under moderately stringent conditions;

(e) sequences having at least 75% identity to a sequence of SEQ ID NO: 1-222;

(f) sequences having at least 90% identity to a sequence of SEQ ID NO: 1-222; and

(g) degenerate variants of a sequence provided in SEQ ID NO: 1-222.

2. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:

(a) sequences encoded by a polynucleotide of claim 1; and

(b) sequences having at least 70% identity to a sequence encoded by a polynucleotide of claim 1; and

(c) sequences having at least 90% identity to a sequence encoded by a polynucleotide of claim 1.

3. An expression vector comprising a polynucleotide of claim 1 operably linked to an expression control sequence.

4. A host cell transformed or transfected with an expression vector according to claim 3.

5. An isolated antibody, or antigen-binding fragment thereof, that specifically binds to a polypeptide of claim 2.

6. A method for detecting the presence of a cancer in a patient, comprising the steps of:

(a) obtaining a biological sample from the patient;

(b) contacting the biological sample with a binding agent that binds to a polypeptide of claim 2;

(c) detecting in the sample an amount of polypeptide that binds to the binding agent; and

(d) comparing the amount of polypeptide to a predetermined cut-off value and therefrom determining the presence of a cancer in the patient.

7. A fusion protein comprising at least one polypeptide according to claim 2.

8. An oligonucleotide that hybridizes to a sequence recited in SEQ ID NO: 1-222 under moderately stringent conditions.

9. A method for stimulating and/or expanding T cells specific for a tumor protein, comprising contacting T cells with at least one component selected from the group consisting of:

(a) polypeptides according to claim 2;

(b) polynucleotides according to claim 1; and

(c) antigen-presenting cells that express a polypeptide according to claim 2,

under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells.

10. An isolated T cell population, comprising T cells prepared according to the method of claim 9.

11. A composition comprising a first component selected from the group consisting of physiologically acceptable carriers and immunostimulants, and a second component selected from the group consisting of:

(a) polypeptides according to claim 2;

(b) polynucleotides according to claim 1;

(c) antibodies according to claim 5;

(d) fusion proteins according to claim 7;

(e) T cell populations according to claim 10; and

(f) antigen presenting cells that express a polypeptide according to claim 2.

12. A method for stimulating an immune response in a patient, comprising administering to the patient a composition of claim 11.

13. A method for the treatment of a cancer in a patient, comprising administering to the patient a composition of claim 11.

14. A method for determining the presence of a cancer in a patient, comprising the steps of:

(a) obtaining a biological sample from the patient;

(b) contacting the biological sample with an oligonucleotide according to claim 8;

(c) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; and

(d) compare the amount of polynucleotide that hybridizes to the oligonucleotide to a predetermined cut-off value, and therefrom determining the presence of the cancer in the patient.

15. A diagnostic kit comprising at least one oligonucleotide according to claim 8.

16. A diagnostic kit comprising at least one antibody according to claim 5 and a detection reagent, wherein the detection reagent comprises a reporter group.

17. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating CD4+ and/or CD8+ T cells isolated from a patient with at least one component selected from the group consisting of: (i) polypeptides according to claim 2; (ii) polynucleotides according to claim 1; and (iii) antigen presenting cells that express a polypeptide of claim 2, such that T cell proliferate;

(b) administering to the patient an effective amount of the proliferated T cells,

and thereby inhibiting the development of a cancer in the patient.

SEQUENCE LISTING

<110> Corixa Corporation
Xu, Jiangchun
Pyle, Ruth
Secrist, Heather

<120> COMPOSITIONS AND METHODS FOR THE THERAPY AND DIAGNOSIS OF OVARIAN AND ENDOMETRIAL CANCER

<130> 210121.501PC

<140> PCT
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gaaagaaggg caaagcaaac tggaagagac ttctactcta ctgacagggc tcttgagatc 240
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tgttctgntg tattcatttc tgnatgtata gctttattaa ttngctaatg aaaattanaa 180
cttttctggg atcttctgac aagatttttа aaaaatctta aaatgccttt tcttcagtga 240
aggcactttt ggagttncca ataaaggggn ccccccctnc catcttnact tnaacctgat 300
attnntnttg tgnnggggggg ggnggggngaa attttaaaaa tatnttaatt taaggaaagg 360
ncatttttttc acagtctaag ttctntgnaa aacttncatt ttcccacnga aagnganagt 420
tnangaannc ccccnngggc ncncccccacc ntgnggggca anttgnaaan tnattatnga 480
acncttggta ttgnttgaat tntttntgnt aacgnnnaat tgcgtgnaag aangctatcg 540
ttnctgtaaa aaaaagggga aacttttnct atantntccn ntannttctt tttanaaacc 600
ccnacccccc ctaaatgtga nccnccgatn ttttnccggg gntggatntt nntcngccct 660
tcncncnccg ccctttttttt anacgccnat ttatattttn taantttatn taanttctca 720
tntct 725

<210> 16
<211> 196
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(196)
<223> n = A,T,C or G

<400> 16
cngaaggtng cctncaccct ggcatcctcc cctccttccn acttntgccc ccaccccatg 60
tctctgtcct tgtcccagcc aggccctgct ccctctccag ccttgacagc ccctcccccct 120
gcctatgcca ccctgggccc ccgcccatct ccaggggggct ctgcaggggc cagttcctcc 180
gcctgtcctc tggggg 196

<210> 17
<211> 667
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(667)
<223> n = A,T,C or G

<400> 17
cagccgtgaa actggaaagt cattttgatg actgatgtga tacatccaga ggtaaaatgc 60
atttaaacat attaaagtat ttgccaaaga tacaattttc ttgctgacat aaaaatcaca 120
caaacaagtc ccccccaaac cacaactgtc tctcaaatag cttaaaaaaa ttgaaaaaca 180
ttttaggatt tttcaagttt tctagatttt aaaaagatgt tcagctatta gaggaatgtt 240
aaaaatttta tattatctag aacacaggaa catcatcctg ggttattcag gaatcagtca 300
cacatgtgtg tgtgtctgag atatagtcta aattagcaaa gcacatagta ttacatactt 360
gaggggttgg tgaacaaagg aaaaatatac tttctgcaaa accaangact gtgctgcgta 420
atgagacagc tgtgatttca tttgaaactg tgaaaccatg tgccataata gaattttgag 480
aattttgctt ttacctaaat tcaagaaaat gaaattacac ttttnagtta gnggnggctt 540
aacataattt tttctatntt aacccgtatt naaatctcaa gtaagaattt nccgtggccc 600
gaaacttgtt angggggaat tttaaaaggg cctcgcattc cgggttacat ggcntanaan 660
tggaagg 667

<210> 18
<211> 1493
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(1493)
<223> n = A,T,C or G

<400> 18
ccccatttct ccattttgtg gaccaagcca tcctgagggc atggacattg tctctgagga 60
aattggggcc acccttaaga taccaagaaa agctcctgcc catggtccca ctggaaatgg 120
actctgctga gcaaagccac cagttgaaga gaacagaatc cacacctgca ttgaatacct 180
gtttctccat gtgtatcgtc tctgagatta ccttcttgcc ctttccaaca ccttagtgat 240
tcctcaattt ctcccccatt gggaaggcca tagggcatta actgaaggaa ctgacctctc 300
tccttttcct gtacctttaa cctttagtct gtcaaggaaa acccttagga cctctgaatc 360
aagaggactg agtttgtggg tgaaccttga aggtgctctt tctgctacaa gggccctggg 420
agatagcatg ggacgtgcat tgagaagcca gcctcagacc ttagcttgaa gcancttgag 480
gccagaccta ctgtacctca gcatcttgct aggaggcatg gaagtgatct atcctgccag 540
gaggcctcag agtgatctgt cctgccagga ggggtgagag tgatctgtcc tgtgaggcat 600
ttaggggctt taggaattan taaaaggggg agtatgcctt tccagaatct tccatcttcc 660
tttgganacc tggccttcct cccatttcct ccctttggcc ccaggtanga aggatggagg 720
gaggnttgtt actnttnccc ttctgggggc cctttctggg ggcctaaccc tgncaatttt 780
anttccnccc tcccttacct ngggatgnng ggnccctttn ccgggattta ancctggggg 840
ctgggcccta antttttcc cttttttttc ccnaaaaaaa aaaaaagggg ggggccccc 900
ctgnnnnngn nttttnnaa aatnccccc nngncntnng gnccccnncn nnccccnntt 960
tnnttnancc nccccctgggg ggtcccnttt ngggggnnnt tnnntttnna nccnnnnnnn 1020
ggggnttttt ttttnnnnna aaantttttt ttnnncnnnc nnnnncnnnn nncnntttnn 1080
nnnnggggggg gnggntnnnn nntttnnann ncccccntttt tnngnnnaaa annccnnnnn 1140
nnnnnggggg gggnnnnnnn nnnnnnnnnn nnnncncccc cnnnnnnnnn nnnnnnnnnn 1200
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1260
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1320

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1380
nnnncngnnn cnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1440
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnc 1493

<210> 19
<211> 1602
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(1602)
<223> n = A,T,C or G

<400> 19
ggaaaatcaa gatgtggctg aagatcagag gctcagttag caacctgtgt tgtagcagtg 60
atgtcagtcc attgattgtc tttagagagt taatgttaca aaaaagaatt cttaataatc 120
agacaaacat gatctgctga ggacacatgc gcttttgtag aatttaacat ctggtgtttt 180
tctgaaaaaa tatatataca tatattgctt tatttgaaac aaattaaaat atgctgcatt 240
tgaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 300
aaaanaaaaa aaaaaaaaaa angggggggn ccccccccng gnnngnnttt ttgnaaantc 360
ccccccccnn ganntngggn ncccnacnnc ggccccannt ttantttaan cccnncccccc 420
cttggggccc ccctnnnggg ggggntttna tttccaaaan cccccaanng ngggggttnt 480
tnntttcncc aaaaancnnt ttttttnnaa accncccccc ggaacccccn ccccccctttt 540
ttcntttaag gggggggngg gntttnttcc ccccttttttg gaaaancccc ctttttttttt 600
tgggggggccc aaaaaaaacc ccccctttng naccnnnnan gggggggggg ggggnaancc 660
tttgggaaaa ccccccccng gggagngaaa ancccctttt ttcccccccc ccctttttgt 720
tttcctnngc cccaaaaacc ccntcccccn ntgggggann tnggcnggng anncnannan 780
cccnnaaaan gnccccccccc cccnnnnggn gaaaaannec cccnnaangg ggnttntntc 840
ccnggggana aaaancccng gggggggncn ttttcccccg tttngnccec naaanggggg 900
gggcccccct tgggcnnnna aaaacccccc ttnntnccen cccccgnggg ggggnnnttt 960
ccccccnaaa ntccccccccc ctngccccna angggaaaac ccccnnngng gggtcccttn 1020
gggnnccccc cnnttttttc ccccccnggg gcgggggggng nngggggggga nnccccgnng 1080
gggcctttcc nnnngttttt ccncccnncc cctntnnngg gggtgaaann aaccccccen 1140
ngnnttnntn ancccccna nannnngncc ccnnttttg tnccccccnc cngaannenn 1200
acccccccce ccnannttt tttgnnnngg gncncccccn gngnntnntt nnccccccce 1260
ccccccccce ccgggggngn ggnttttttt gnnnnnnnnn nccccengggg ggggngcccc 1320
nccccencnc ggnnttggg ngnnnccccc ctnntttntt tnnnnccncc ccccccccce 1380
cgccntttnn gnnggnggng nnnnncngcn cccccctnnn gntcnnttnt cncccencen 1440
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn cnnnnnnnnn nnnnnntnnc 1500
ncncnngcnn tcnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnngnnngng nnnnnnncnn 1560
nnnncnnncn nnnngcnnnn ngnnnngcnc cgcccncnnn cc 1602

<210> 20
<211> 1633
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(1633)
<223> n = A,T,C or G

<400> 20
agcacgccag ccatcagccc ctgaatccac ctcacccact cgccagacct ttttgtcgaa 60
gttcatgtcc ttccttagcc ttccaatgaa gcctctacct gcctgagatg tccaaggtaa 120
tccatcagct gaggctctca gagaatgaaa gtgtggccct gcaggaactc ttggactgga 180
ggagaaagct ctgtgaggaa ggacaagact ggcagcagat cctgcaccac gctgagccca 240

gggtgcctcc cccaccacct tgcaagaagc ccagccttct gaagaagccg gaaggggcct 300
cctgcaacag gctgccgtct gagctctggg acaccaccat ttgatgtggc ctgaactgca 360
gacttacaaa atagaactgc ctactgattc cgggctgcaa caacagaagg ctgccttctg 420
acatgcgctg gggcttctct ccacgcattt agacaaaaaa agcacaggac acagacacta 480
aatatatgag atcccgtgtg tgtgtgtgtg tgtttgtgtg tgtgtgtgtg ggttctttct 540
tatccatctc gnggngatac actctgattt tcaagctcct catttacggg tcttgtgcta 600
cccctaggta ncaagaaaan aggctgggaa aaagtgtggn cgtggncnan agcgananaa 660
gtancggnng gaaaggagcn antccatgca cacttctgta ccngtngttt tttntacngg 720
ntcaaacagg nntgnntnat tggncnttnc caangggggt tttntttant aannaccnng 780
nnntnncngg ggannaanan nannnnnnna nnnnnnnttt nggnnnncen cccttggggg 840
ggnnnnantt ggggcncnct cnctcccccc cctcncnccc ccctcccccc tcacnncgnc 900
ncnccntnnn ccncggcgcn nctccncntc nncnnccnnn ntcgncccnn nngngggggg 960
gcggggnngn ncccccnctct nctccncnnn cccccccccn cnccnncncn ncnncncccc 1020
cncccncncc nnnncncccc ccncnncccc ncccccccnn nnnngnnnnn nnnnnnnnnn 1080
ncnnncccce ccccccncce ccccccnncn ccnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1140
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nngggggccn ngnnnnnnnn nnnnnnnnnn 1200
nnnnnnnncn ncccccccce cnnnnnnnnn nnnnnnnnnn ncccccccnn nnngnnncnn 1260
nnnnnngnnn ngngggggnn gnnnnnnnnn nnnnnnnnnn nnngnnnnng nnnnnnnnnn 1320
nnnnnnnnng ggnnnnnnnn nnnnnnnnnn nnnnnnnnng nnnnnnngnn nnnnnnnnnn 1380
ngnnnnnnnn nnnnnnnnnn nnnnnnnnnn nngnnnnnnn nnnnnnnnnn nnnnnnngnn 1440
nnnnnnnnnn nccgnccccc cgnncnnnnn nnnnngnnnn nnnnnnnnnn nnnnnnnnnn 1500
nnnnnnnnnn nnnnnnnnng gggnnngcgg ngnngngggn nnnnggnnnn nnnnnnnnnc 1560
cnncccccnn nnnnnnnnnn nnnnnnnnnn nnnnngnnnn nngnnnnnng nnnnnnnccn 1620
nnccccccng nnn 1633

<210> 21
<211> 1462
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(1462)
<223> n = A,T,C or G

<400> 21
gggctcccaa aatggcgaag tgaggctgcg gggactcgct gagcagcgga gggggagcgt 60
gcagagccgc tgcggccctc acagtccgga gcccggccgt gccgtgccgt agggaacatg 120
cacttttcca ttcccgaaac cgagtcccgc agcggggaca gcggcggctc cgcctacgtg 180
gcctataaca ttcacgtgaa tggagtcctg cactgtcggg tgcgctacag ccagctcctg 240
gggctgcacg agcagcttcg gaaggagtat ggggccaatg tgcttcctgc attccccca 300
aagaagcttt tctctctgac tcctgctgag gtagaacaga ggagagagca gttagagaag 360
tacatgcaag ctgttcggca agacccattg cttgggagca gcgagacttt caacagtttc 420
ctgcgtcggg cacaacagga gacacagcag gtccccacag aggaagtgtc cttggaagtg 480
ctgctcagca acgggcagaa agttctggtc aacgtgctaa cttcagatca gactgaggat 540
gtcctggagg ctgtagctgc aaagctggat cttccagatg acttgattgg atactttagt 600
ctattcttag ttcgagaaaa agaggatgga gccttttctt ttgtacngaa gttgcaanaa 660
tttganctgc cttatgtgtc tgtcaccagc cttcgagtca anantataan atgtgctaag 720
gaaganttat tgggactctc ctatgatnac nattnatgga naacccggtt ggccttnaac 780
cttcttttttg ctcanacggt nttaaaatat ttagncgngg ggngggatct ttggtcaccc 840
aaggaaaaan nacccggnaa ntttaaaatt ttttgnnaaa aaaaaaannn ttccnaaaaa 900
gggaatttct ttnaaanttg gccccaaana ccttgnggnn ctttnggnnn ntttgnnctt 960
ttnannnccn nnggggggnng nnttnccnna aaaaaaattt nntttnnngg gnnnnncnnn 1020
nncannnnna annnnnnnnn nnnnncccnc cngngnnnnn nnntnnaaag nnttttnnng 1080
gnnccennaa aatngggggn ncnntttttt nttttnccnn nnnnnnnnnn nnnnnnnggg 1140
ggggggggnc ccnnnnnttt ttnnnnnann nnnnnnnnnn nnnncnnncc ccnnntnnaa 1200
annnnnnnnn nnnnnnnnnn aannnnnnnn nnnnnnnnnn nngggggggn nnnnnnnnnn 1260
nnnnnnnnnc ccnnnnnnnn ncnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1320

nnnnnnnnnt ntntngnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn gnnnnnnnnn 1380
tnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1440
nnnnnnnnnn nnnnnnaaaa an 1462

<210> 22
<211> 1601
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(1601)
<223> n = A,T,C or G

<400> 22
cccgaagcac gacgcagagc ctccggtgtg gctgtctctg atggtgtcat caaggtgttc 60
aacgacatga aggtgcgtaa gtcttcaacg ccagaggagg tgaagaagcg caagaaggcg 120
gtgctcttct gcctgagtga ggacaagaag aacatcatcc tggaggaggg caaggagatc 180
ctggtgggcg atgtgggcca gactgtcgac gacccctacg ccacctttgt caagatgctg 240
ccagataagg actgccgcta tgccctctat gatgcaacct atgagaccaa ggagagcaag 300
aaggaggatc tggtgtttat cttctgggcc cccgagtctg cgccccttaa gagcaaaatg 360
atttatgcca gctccaagga cgccatcaag aagaagctga cagggatcaa gcatgaattg 420
caagcaaact gctacgaaga ggtcaaggac cgctgcaccc tgcagaaaan ctgggggnca 480
gtgcccgtca tctccttgaa ggcaaagcct tttgtgaacc cccttctggc cccctgcctg 540
gaagcatctt ggcaagcccc cccnnctgcc ccttgggggg ttgcnaggct tgcccccctt 600
ccttcccana accggaaggg gcttgggggg gatcccccan caggggggga aggggcnant 660
ccctttnccc cccannttgg ccnaaaccng nnccccnccc nccccccttgg nanttttttcc 720
nttnttnccc ttcccatncc cntttngcng gggtnnttng gnccctttcc ccnaaannntg 780
gggnttttnn gnaancnttt ttnnaaannn nccentnttt gggggnctnn nnaaannccn 840
naancccnna nngtntnncc ccccccccnn ngggncnccc ccccccnnnt nttntnnnng 900
ggggggggnn aaancccccn nnnnnnnnnn nnnnnnnnnn nnaaaaanaa aannantncn 960
ccccccnntt tttcccccnc ncccncngg gggnnccnnn tccccccccn ttttttcccc 1020
nannnnnnnt gggnnncnna annttttttt tnnancccnn cnnnntnnnn nnnnnnctcn 1080
nngnnnnnnt ttnncnntnt nttnnnnnnn nnnnnnnnnn nnnnnnantn nnnaannnnn 1140
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nnnnnnnnnn ttttnccngn nnnncnnnaa nggcnccttn nnntnaannn nccccttccc 1260
nngnnnngnn nccccaangg nganaantgg ggnnccccnc ccccnnngcn nnnnaanttt 1320
nnnttngggg gnnnnnnccc cccgccgcgc ctcccnctcc ccttcgcgcc gccccgcgcc 1380
gccgtccgcc ccgccccccc nctcccnctc cccgccgtcn ctcncttcnc tctccnccgc 1440
gccccgcccg cgcgcccgct cgncgtcncg ncncncnncn ccnnnnnnnn nnncgnnnnn 1500
ananaagnnc nccnaccnat cccccccgcc nnccccccnt nccgnnnnng nnnnnnnnng 1560
nncgcccncc nccccnnncc ccentncgtn cccccccntt n 1601

<210> 23
<211> 1566
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(1566)
<223> n = A,T,C or G

<400> 23
ttttttttnt tttttgattt tttttaatgc tgcacaacac aatatttatt tcatttgttt 60
cttttatttc attttatttg tttgctgctg ctgttttatt tatttttact gaaagtgaga 120
gggaactttt gtggcctttt ttccttttnc tgtaggccgc cttaagcttt ctaaatttgg 180
aacatctaag caagctgaag ggaaaagggg gtttcgcaaa atcactcggg ggaagggaaa 240

ggttgctttg ttaatcatgc cctatggtgg gtgattaact gcttgtacaa ttaccgtttc 300
acttttaatt aattgtgctt aaggctttaa ttaaatttgg gggttccctt cttagagcag 360
ctcgtactga cgaaggtgca tgcgctgaat gatgtcacgg cagtcgttga acacacggcg 420
gatgttctca gtgtcccagc gcangtgaaa tgagggtagc agtagtgacg cccatctcca 480
ctggcagtgc tgatcctcag aaactcatct cgaatgaagt acttggcccn ggtcacgcgt 540
gggtnctctt cnggctcngg agtancatnc tcangagtag ggtagcgagc aaattctgga 600
aagaagcctc aatcttcnat ttcccnncaa ggactttctc ancganccan atcttgcttg 660
tttganggaa ccaggaatcc cngnnnaatg gngcncaacc ccttcttgtt ggttncccaa 720
aangcccntt gaaaaaaggg ttcaaaaanc cctccctgcc anggccgggg ttngggncct 780
gggnttgncc ccccccccgg naaaaaancn ctnntttnnn naaancttgn nttggnttgg 840
ggnccccccc ccccnaaaaa aaaanaaaag gggnnnnnnn ccnccccnnt nntttnnaaa 900
aanaccccng gggnannccc ccccttttgg gggggggnnn tnnntttnnn nnncnnnggg 960
ggcccccccc cccnnnnnaa aaanaattnt ggggaaannn nnnannnttt ttnnccccnc 1020
ccnnngnnaa aantnngnnn tnncnnaaaa tnncccnaaa nnnnnngccc ccnnnnnnnn 1080
aaaannnnnn nntnnnnnnn nnnnnaanaa nnnnnccccn tntannncnn nnnnntnncn 1140
naaaanngng gcncnnnann nnnnnnnncn tngnnnnnnn nnnnnnnnnn cnnttttttn 1200
ccnnaanntn nnnnntnnnn nngnggggnn aannngncnn cnccccnccna annnnccccnc 1260
nnnnggggnn ncccccnnngg gcccnnnnnn nnnnccnngn nnnnnnnnnn nnnnnnnnnn 1320
nnnnnnnnnn nncccngnnn nnnnnnnnnn nnnncnnnnn cnnnnnnnnn nnnnnnnnnn 1380
nnnnccnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnngnnncn 1440
nngncnccnc nnnnnnnnann nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1500
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnncn nnnnnnnncn 1560
nncccc 1566

<210> 24
<211> 651
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(651)
<223> n = A,T,C or G

<400> 24
cgtcggttgg cgactcccgg acgtaggtag tttgttgggc cgggttctga ggccttgctt 60
ctctttactt ttccactcta ggccacgatg ccgcagtacc agacctggga ggagttcagc 120
cgcgctgccg agaagcttta cctcgctgac cctatgaagg cacgtgtggt tctcaaatat 180
aggcattctg atgggaactt gtgtgttaaa gtaacagatg atttagtttg tttggtgtat 240
aaaacagacc aagctcaaga tgtaaagaag attgagaaat tccacagtca actaatgcga 300
cttatggtag ccaaggaagc ccgcaatgtt accatggaaa ctgagtgaat ggtttgaaat 360
gaagactttg tcgtgtactt aggaagtaaa tatcttttat tagagaaagt gttgggacag 420
aaagtacttt atgtaactaa gtgggctgtt cagaacttan aggcattttt tgtaatttct 480
ttttaattac tttananagc tagggatgca aatgttttca gttagaaagc ctttatttac 540
ttttggaaat tgaacaanaa atgctttgtc ttanaactgg agaatatttg atggtaggga 600
aacatgtaat ggttctctgg caaaattgnn tcannatttg aaatgaaann n 651

<210> 25
<211> 676
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(676)
<223> n = A,T,C or G

<400> 25

```
gggggacaga gactcagatg aggacagagt ggtttccaat gtgttcaata gatttaggag      60
cagaaatgca aggggctgca tgacctacca ggacagaact ttccccaatt acagggtgac     120
tcacagccgc attggtgact cacttcaatg tgtcatttcc ggctgctgtg tgtgagcagt     180
tggacacgtg aggggggggt gggtgagaga gacaggcagc ttgnanntnn ttgcttngan     240
ntttcncnta naacccgcna gcgcttnggt agggtnngcn anggatgncn nncnttnttc     300
nnaagncncc ngttcngngt canttgcttg nctcntctaa ctcnnnnnnc ccccnnttnn     360
gtctcctnng ngntcnaccc nntctgnttc ttngntcnng nttgncctcg nnnttnnttc     420
nnngctcngc ncgtntggtg nnntgngnat nannctnanc gngtttntnn attntnnctn     480
ncgtngancn catntgancc ttntnnngnt nttcgnctnn ntcgancgtn ttcngggncn     540
cnccncgnnt ctnnctnncc tcnccctttt ntcntcttgn ttgtggcntn acctnnctcn     600
ttctntgtnt ncnngccttn nngtgnnncn gatagtcnnc cctntttgnn aatatctntn     660
tnntcncccc cctccc                                                     676
```

<210> 26
<211> 657
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(657)
<223> n = A,T,C or G

<400> 26

```
ttttttttt tttttgctgg gtggtaactc tttatttcat tgtccggaag aaagatggga      60
gtgggaacag ggtggacact gtgcaggctt cagcttccac tccgggcagg attcaggcta     120
tctgggaccg cagggactgc caggtgcaca gccctggctc ccgaggcagg caggcaaggt     180
gacgggactg gaagcccttt tcanagcctt ggaggagctg gtccgtccac aagcaatgag     240
tgccactctg cagtttgcag gggatggata aacagggaaa cactgtgcat tcctcacagc     300
caacagtgta ggtcttggtg aagccccggc gctgagctaa gctcaggctg ttccagggag     360
ccacaaaact gcaggtagtg atgtgcaaga ntccatcctg cagttttcca gcaatganaa     420
actcctcctg cggttgtggg acctggggaa gtatccgcan acctctcctg gcgggggtgt     480
agacnaaccg gatgtcaccg gcatccccta aagnttggaa ccctttatac atcttgggca     540
tcttganctc ataacgctgg tataaggngg ntnggtngac ttttggnngt ccccccaant     600
gcccttgana ccaaggccgn aattncnaaa ggcccctgng gggggggggg acccagn        657
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<210> 27
<211> 646
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(646)
<223> n = A,T,C or G

<400> 27

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ggaangctga agaattaaca ntttgactnc taaatgtgat actggntngt anattccctt      60
agagcagaaa ggagaggggc acatattaat ttgtatcgct tttgcttctc tttggtcttt     120
tgtgtcttag aatttggaag tggttcattt ctgttgctgg tatgaggatt tcgaatactt     180
agtaatcgaa aaccatatcc tgtaatttaa taaaaaaaac taaggaagaa aaaaccctcc     240
aattttccca aatgcaatca gtgtaactag gggctgtgtt tctgcattaa aataaatgtt     300
tcangctttg tggtcctgat caaggtcctc attaaaaaat tggagttcac cctagngctt     360
ttcccctctg tgactgggct cntcccccac cnctcttagg tatcgcagtt attatgggnt     420
ncaaatnaag naatangntt nncaaatttn accaaanaaa gcatttttt cactgcnttn     480
tnattggggg gttggcccaa ccncntcaat ggntcttanc atggntggnt acccgcnacc     540
tttncntnaa cttggngnaa ncnngggcnn tacnnttcct gggggnaaat ngtntccnnc     600
cantccccnc ncntncnanc cgaancnnaa agggnaancn nggggg                    646
```

<210> 28
<211> 407
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(407)
<223> n = A,T,C or G

<400> 28
caagagtctt tgaaataagc ccatttgagc cctggataac aagggataaa gtggagcgga 60
tgcacatcac agacatgaaa ttgcctcacc tgcctggctt agaagacctt ggtattcagg 120
caacaccact ggaactcaag gccattgagg tgctgcggcg tcatcgcact taccgctggc 180
tgtctgctga aattgaggat gtgaagccgg ccaagaccgt caacatttag tgcctcctga 240
gcagctcttg gttttggcgt cttttgggtc ggcccatgtg gtttgagcac ccagccaggc 300
ggtctcttta gaggatcctg tacacagttc cactattaaa acatttcagg ttgaaaaana 360
nnnannnnnn nnnnnnnnnn nanannnnnn nnnnnnnnnn nnnnnng 407

<210> 29
<211> 625
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(625)
<223> n = A,T,C or G

<400> 29
ttttttttt ttttttttt ttttttttg gggaccaaat ttctttnttt gaaggaatgg 60
nacaaatcaa acgaacttaa gnggatgttt tggnacaact tattgaaaag gnaaaggaaa 120
ccccaacatg catgcactgn cttggggacc anggaagtca ccccacgggt ntggggaaat 180
tancccnagg nttancttte attatcactg nntcccangg ngngcttgna aaanaaanat 240
tccncccagc cacattnngg cnctcccatn ttgcncaagt tggncacgtg gncacccaat 300
tctttgaagg ctttcaccng ctnattnaag naangggtct caatgaaanc acaccantgg 360
ggggnatttt tgntnnnngc ccattgggca attcccaana tggctgaatc aaatttttt 420
nccaaagnca ngcccctcca atggattnaa ancccentnc caatanaaca nnnggntttt 480
ttatcctcca agaaaaattn ggcccntntn gggntggaag gtttnantat tacaagcncc 540
ttcctttaaa tggggaaaaa nttttgnnaa annttaaaac cncntcgcca agntttnaaa 600
agggnaggna ngcngngggt tacnn 625

<210> 30
<211> 643
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(643)
<223> n = A,T,C or G

<400> 30
cttaagaatt ggcccagcct cagatcctgt ctttagcaac cagctaatat ttacccagag 60
gtactgcaat agagtatttc aaaatggaat caggatctgg tgggcctcag aaattgtctc 120
ttttctgagt ttcaatttgg ttctcctgga tgttttgctc tgttttggta cctgtaatat 180
agggaaacac aacttttttt gggaaagccc tttgacccca gcttgctagt tgcataataa 240

taaattttct gttcctaaaa aaaaaaaaaa aaaaaaaaaa aaaanaaaaa aaaaaaaaaa 300
aaaaaaaaaa aaggnngnaa naaaaaaata ananggggncc gntaaaacnn gggggggggcc 360
cntcaanttt aaagggccct ttaaancccc tnnnnaancc nccntggncc nttttnnttc 420
ccacctttg gnggnnggnc ccncccccgg nctttttttg ncctgggggg nccccccccc 480
tggtcnttnc ttanaaaaan nangaanttg cctcccttnt cngaaaangg ntctttttt 540
ttnggggggg gggggggggg ggaannnggg gggggtggg ggaaaaattn nggggntttg 600
ggaaccnggg gcccttgccc ttnngaaaag aaccccntggg ttt 643

<210> 31
<211> 645
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(645)
<223> n = A,T,C or G

<400> 31
gtgaaagctg taaaacacct tttatggaag aaaagaaata aaatgtagtt gtcaagtcta 60
aaaaatagta gcaacgggaa tcataatgaa tacatgcaat gaatttaaaa tgtaaaaatg 120
aatttaaaaa gtaaaaaggg ctctgtggtg taatttttct taactacaag agtctaaata 180
cactgctttt ctttaagagt tcattttaat tagtaacgtc aaacaaaatt attctagata 240
atgagcccta caaattacta ctactagcaa ctgtcatttt ttactcgggc atcctctagg 300
tgtcttacat tctcatttta ttcttacaac gaactcatcc tccagaagga cttcatcctc 360
cagaaggact catcctccag aangactcat cctccaaagg acttctccag aaggggaaa 420
tggaagaccc gggtaacttg ctcagggctt atcacagaac tatgtttgag cctgacttcg 480
tttgaactct aaagcccaca tgctctttct actgccccat gcttctcaag gnaccagact 540
cttatttnct gcacttttga gaatctnaag atcctgantc attttaaata aatttagttt 600
tttggggagn agccnnaaaa aaaaaaaaag ggcgccctcc ncnnt 645

<210> 32
<211> 668
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(668)
<223> n = A,T,C or G

<400> 32
tcccgttctg ttttaaacag aaaataaaag gagtgtaagc tccttttctc atttcaaagt 60
tgctaccagt gtatgcagta attagaacaa agaanaaaca ttcagtagaa cattttattg 120
cctagttgac aacattgctt gaatgctggt ggttcctatc cctttgacac tacacaattt 180
tctaatatgn gttaatgcta tgtgacaaaa cgccctgatt cctagtgcca aaggttnaac 240
ttaatgtata tacctgaaaa cccatgcatt tgtgctcttt ttttttttta tggngcttga 300
agtaaaacag cccatnctnt gcaagtccat gtatgcngcn cttaagcntt ctatctttgc 360
tcaaatngnt gaangatggg gaccttggct catggcttgc gnatttgatc ntaangnncn 420
tttctancta tgntatgagg cacnngccct attggaggnc gccccnggtt tccggaaaag 480
ngcnntnntg tngngaattg cnnctcggan ttcaanaata tncggcnntt gntttgnang 540
ccnngnnnan caatcaggng ngcccctcna antcatgnaa gccccgnntn aannncnctnc 600
nctnttctcg nnntgggnnt tccattgccn gcctcgacgn ggttngcctc tcnccggcnn 660
cncgcncg 668

<210> 33
<211> 682
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(682)
<223> n = A,T,C or G

<400> 33

ggcttgtccg agttgatatg cgtatgcttt gcctaaaaag ccttaggaaa ttagacttga 60
gtcacaacca tataaaaaag cttccagcta caattggaga cctcatacac cttcaagaac 120
ttaacctgaa tgacaatcac ttggagtcat ttagtgtagc cttgtgtcat tctacactcc 180
agaagtcact tcggagtttg gacctcagca agaacaaaat caaggcactc cctgtgcagt 240
tttgccagct ccaggaactt aagaatttaa aacttgacga taatgaattg attcaatttc 300
cttgcaagat aggacaacta ataaaccttc gctttttgtc agcagctcga aataagcttc 360
cattttgcc tagtgaattt agaaatttat cccttgaata cttggatctt tttggaaata 420
cttttgaaca accaaaagtc cttccagtaa taaagctgca agcaccatta actttattgg 480
aatcttctgc acgaaccata ttacataata aggattccat atggctcttc atattcattt 540
ccattccatc tctgcccagn atttggggat acccgcanaa aatttggggt ttgggggggaa 600
aaatntggnc tggaactttt tttanttnaa gggaaataat naggggngga agggggggggt 660
ttntggntgc ccccccccng gn 682

<210> 34
<211> 1549
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(1549)
<223> n = A,T,C or G

<400> 34

ttgagagata cctccctcct tctgctcagc tgccttgcag taattaaact ctttctctgc 60
tgcaacaccc ctactgttct ccgtgtattg gcttttctgg gcagcaggaa ggaaaagctg 120
atgcgatgct ctcagtgccg cgtcgccaaa tactgtagtg ctaagtgtca gaaaaaagct 180
tggccagacc acaagcggga atgcaaatgc cttaaaagct gcaaacccag atatcctcca 240
gactccgttc gacttcttgg cagagttgtc ttcaaactta tggatggagc accttcagaa 300
tcagagaagc tttactcatt ttatgatctg gagtcaaata ttaacaaact gactgaagat 360
aagaaagagg gcctcaggca actcgtaatg acatttcaac atttcatgag agaagaaata 420
caggatgcct ctcagctgcc acctgccttt gacctttttg aagcctttgc aaaagtgatc 480
tgcaactctt tcaccatctg taatgcggag atgcaggaag ttggtgttgg cctatatccc 540
agtatctctt tgctcaatca cagctgtgac cccaactgtt cgattgtgtt caatgggccc 600
cacctcttac tgcgagcagt ccgagacatc gaggtgggag aggagctccc atctgctcct 660
ggatatgctg atgaccagtg agggagcgcc cggaagcagc tgagggacca gtactgcttt 720
tgaatgtgac tggtttcccg ttgccaaaac ccaggacaan ggatgctgga tatggcttaa 780
cctgggggga tgaaccaang tttttgggaa ngggaaagnt tnaaanaaaa tcccctggna 840
aaaaaaantt tnnaaanaaa accttggaan ggggcccccc ttgggaaaaa ngggggggan 900
nnngggttnt tnggnccnnt ttnnccccen nnnnannnct ttaannnngn nnantttttt 960
nnaanggggg nntnnccccn ntttnnaann ntntntcccc nnnnnanggg ggggtnncnc 1020
nnnccccccng ggggnncnnn ntnaacnccn nnctntnggn ggaaancntt tttttncttc 1080
nnccnnggnc cccnanannt tttcccagaa nccccccccng ggggngnnng gaaangnnnn 1140
nnnccctcnn gggggttncc ccnnnaaaaa aaannnggnt tttttttttna nganccgggg 1200
acnccccnnn naaannttttt tnnaaagcgc cccccnnnnt nnggnnnnnn nggnannnnn 1260
nnnttngnnn nttngcccnc cnttnnnngn nccnctcnnn nnnnnnnnnn nnnnnnnnnn 1320
nnnnnnnnnn nnnnnnnnnn cntntanntn ntgnaaaaaa nggnnnnngn nnnnnnnnnn 1380
nnnnnnnngn cccccnngng nnnnnnnnnn nnnnnnnnnn ggggggnngn ggnnngcnnn 1440
nnnnnnnnnn nnncnnnnnn nnnnnnnnnn nnnnnnnnnn ncgnnnnnnn nnnnnnnnnn 1500
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnncngnng nnggnnanc 1549

<210> 35
<211> 1440
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(1440)
<223> n = A,T,C or G

<400> 35
ctaatctaag cctcaaactc gttattgggg ctataaagaa aacgtttact tacccagctg 60
aaacaggtta agaatattct taatctcatt atagataatt gcccccatgg gacttgaaat 120
acaacacctt gtgctgaaaa cttcaggttg gcaatatttg aaggtttcgt tgtagaagag 180
tttaacatta actcctattt tgacttacaa atcttgtttc tcatcactaa aatgcttttg 240
aattaataat ccaacccaca tgagctgaga gtttttcttt tgttagaaaa gaaacagaca 300
tctttctgta tgaaagtata aattgtatgg ttttagatac ataagaattg acaaaagcga 360
gcgaaatctt tgtacttctg agttcttgct gtatgtatgt tttgttttaa atctgattag 420
ggacacccag cagctggccg ggattcttgg attgctcctt gggagttaag attgtcaata 480
ctcctgtgaa gcaagggatt tcagccatag aacaaagatt tattgttgcc acctgaaaag 540
tttacaagta tttattgtgt atttgataca ttgcttgaaa aagatgaaat ctgttaaaga 600
ttcttttccg atgtccaggt taagaagaaa cctccttgta ttgagtgaaa ttatatgtta 660
aatggtatta gagaatgtag gtggnataga aattggattt ttcttggngg tngaacaacc 720
tcaagttcgg caaagtttaa aatttggatt aaacaagaaa aanggttca nggttgnaaa 780
angggacttg nttagggang ggacaanggc ctttaaanna ccngcgtccc ttctccnggc 840
nggcnngncg ggcccnnccc caanctnntc cangcnttcg nccncnaccn nccnccttt 900
cctnntnnca cnaanntctt tnnccntttt tacngggggn ggggnnnccn ncnccggcnn 960
cngnntncgc cncccanaaa nnccnncntt ttccnncnnc ccntttncnn nnnctttnnc 1020
cnnnnccccc cccgnnnnnn nnnnnnnnnn nnnnnnnnnn nggnnnnnnn cccnnnnnnn 1080
nnnnnnnnnn nnnnnnnnnn nnnnnnggnc nngggnnnnn ttnntnnnnn gggggncnnn 1140
nnnnnnngcg nnnnnnnnnn ngnnnnnnnn nnnnncgnnc nnnnnnnnnn nnnnnnnnnn 1200
nnnnnnnnnn ncccnngnna ncnaannncn nnncnnnnnn nnnnnnnnnn nnnnnnnncn 1260
cnncnnnnnn nnngnnngnn nngnnncnnn nnnnnnnnnn nnnnnnnnnn nnnnnnngnn 1320
nnnnnncgnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnng nnnnnnnnnn nnnnnnnnnn 1380
nnnnnnncnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn gnnncgaaga nggccnaccg 1440

<210> 36
<211> 1496
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(1496)
<223> n = A,T,C or G

<400> 36
tgcataccgt ggaagggcgc cagggtcttt gtggattgca tgttgacatt gaccgtgaga 60
ttcggcttca aaccaatact gcctttggaa tatgacagaa tcaatagccc agagagctta 120
gtcaaagacg atatcacggt ctaccttaac caaggcactt tcttaagcag aaaatattgt 180
tgaggttacc tttgctgcta aagatccaat cttctaacgc cacaacagca tagcaaatcc 240
taggataatt cacctcctca tttgacaaat cagagctgta attcacttta acaaattacg 300
catttctatc acgttcacta acagcttatg ataagtctgt gtagtcttcc ttttctccag 360
ttctgttacc caatttagat taagtaaagc gtacacaact ggaaagactg ctgtaataac 420
acagccttgt tatttttaag tcctattttg atattaattt ctgattaagt tagtaaataa 480
cacctggatt ctatggagga cctcggtctt catccaagtg gcctgagtat ttcactggca 540
ggttgngaat ttttcttttc ctctttgggg atccaaatga tgatgtgcaa ttcatgttta 600

acttggggaa acttgaaagg ggttcccata tancttcaaa acaaaaacca aatggtgtta 660
tccngacgga tctttttatg ggtnctaact agtactttnc taattgggga aaagnaanng 720
ctttnagttt tgcnnaatta agtttggggg aagggcnata attaaaaatt gagggccccg 780
tnacnaaaac caactggggg ngtntaacga aaaaccctgt tttnaaaagg gggccttttn 840
ccccttnnnn ngnnatntna nttnccccnt ttgccntttc cnttttnnnn naaacttttt 900
nnnttttctc cccnancnnn naaangngna nngggtntcc ccccnangtt nnnnttnttc 960
nnnnnannna nccccccctt ngnggnnccn nnngggcntt ttctcntngn naanngttnt 1020
nnnannccct tttgncnnnn gggnnttgng nttcggnngn ccnngggggn nnnnccnnnn 1080
gnnngnnnnn gannangann nnnggnggnc gtntnnnngg ccgcgggnnn nngngnnncg 1140
ngnnnnnngn nnnnnngnnn cnnngnnnnn nngnnnnnnn nnnnnangnn nnnnnnnnnn 1200
nnngngnnng ngnnnnnncn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnncn 1260
nncnnntntn aancnnnnnn nnnnnnnnnn nggnnnnnng nnnnnngngn nnnnngnnnn 1320
nnnnnnnnnn nnggnnnnnn nncnnnnnng nngnnngcgg nnnnnngnnn nnngnnnnnn 1380
nnnnnngnng gnnnnnnggn gnnnncnnnn nnnccgcnnn nnngnncncn cnnnnnnnnn 1440
gncnncnnnn cnnnngnnnn nncnnnnnnn nngnnntnng nnnnnccgnn gnnntc 1496

<210> 37
<211> 1604
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(1604)
<223> n = A,T,C or G

<400> 37
atgcagtcct ggatggagcc gactgcatca tgctgtctgg agaaacagcc aaaggggact 60
atcctctgga ggctgtgcgc atgcagcacc tgattgcccg tgaggcagag gctgccatct 120
accacttgca attatttgag gaactccgcc gcctggcgcc cattaccagc gaccccacag 180
aagccaccgc cgtgggtgcc gtggaggcct ccttcaagtg ctgcagtggg gccataatcg 240
tcctcaccaa gtctggcagg tctgctcacc aggtggccag ataccgccca cgtgccccca 300
tcattgctgt gacccggaat ccccagacag ctcgtcaggc ccacctgtac cgtggcatct 360
tccctgtgct gtgcaaggac ccagtccagg aggcctgggc tgaggacgtg gacctccggg 420
tgaactttgc catgaatgtt ggcaaggccc gaggcttctt caagaaggga gatgtggtca 480
ttgtgctgac ccggatggcg ccctgctccg gnttcaccaa caccatgcgt gttgttcctg 540
tgccgngatg gaccccanag cccctccttc agccnctgtg ccacccccct tcccanccaa 600
tccattaagn cannaangct tgtanaactt cactctggnc tgtaaacntg gncacntgtt 660
nggtngggac accttgggaa ggaaaaatca acncctcant tgnaaaattg gggtaangnt 720
tgccantcnt gtttttaaan gggacnagnc gcgaggaagg gctnanttnn ttanantnnn 780
aggggcccc cnnccccnat nnananggggg caaanaacgg nanggnaaat ngnttnnnnc 840
cttngnnngc ncccccnnng gannnccnn nncgnggnnn nnnnagnggg gntcancnnc 900
ntncccttnt nctnnntgng gtnnnccnnn nnnccnnnnn cacgttnaaa annnaaatnn 960
ngncccnnnn gnnngcctca cncnnttngn ggnnngaccn anccaccnng cnnatnggng 1020
ntggnagggn ctctncnnca aancantnng gncttcgtna ngngtgnnnn nnnnnnnnna 1080
ncnngntnnn nncncnnngc nannnngtnn cnngnntccn cccacttgtn tnncnannng 1140
ngtnnnngnn tngannntcn nngnttgnat cccggnaana cnannnncgg ncncnggcnn 1200
nccnncnncn gnncnntccc nnncccnatn nnggnggnnn nctgcnanct nnnnngancn 1260
cnnnnnnnnn gncncanncg antngngnng nnnntnncnn nnnnnnnnnn nnnnnnnnnn 1320
nntnnnnnnn nccgnttntg ctngcagtac tntcgngnnt ntcnnnnnnn ngnnnnnnnn 1380
ncnnnnnnnn nctngnacnt tngnacgcnn nagtcgacnt nctnggacnt nntnnncant 1440
cnngccnngt nnngnntngn ngcnnacnnn nnnacnnngg cgnnnnnnnc ncatnncnnc 1500
nctnanannn ggtnngngng nnnccttccn nnnnagnnnn natanngncn nnanncnccn 1560
nnnnnnnnnc ngnnnnncnn nntcnncgaa nanntgncac nacg 1604

<210> 38
<211> 280
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(280)
<223> n = A,T,C or G

<400> 38
ttttttttttt tttttaattt atcagngctt aaaaatcttc aaaatagctt agtgaggctc 60
atgacagtgc tggccccatg gaaatgtagc cttttgttgc gtttaaacac tgtcacacca 120
tctatgactg tcccattggt ctgaagtgta gtggcaaact aagcatccta taagacaagc 180
taaagcttgc tttttgccag tcagttgaaa gtcttgcatc tcttcactga tgcactttct 240
ttaggtattg atagtcagaa gcacaaagca tttattatgc 280

<210> 39
<211> 378
<212> DNA
<213> Homo sapien

<400> 39
cgagtttata atcctataat gaagaatact ggcacaggca atgctcactc gaaaacttca 60
agtaatttct agttggtttt ggaatgcttg ataaagttcc tttacagctt tattttcctg 120
atttgttttg gtttagatca aagttcaaat taattttaac ttagctaatg aactcatcac 180
caggacagtt ggaggggtta ggccgaggtt aaatggtcca cgtttcaaaa atgttaatgg 240
ctaatccata attaaagaag gtttaactgt tactgaagtt tacaagtttt attgtcatga 300
acatgaaata caaacacgat ggcttcgaaa tgtctttcaa taaatgtttc tgcatttata 360
tggaaaaaaa aaaaaaaa 378

<210> 40
<211> 2039
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(2039)
<223> n = A,T,C or G

<400> 40
caacttttgt agaagtattt ttttctctgt aatattttta ttggctcata aagatgtttt 60
catatctgaa ctcctaaata agtgaaatta cagtagatta tattaacaaa atacttttta 120
ggtagccatg cttgagactt tttaaaaata taacttttc cttaaagttt tcagctatag 180
caaaaggtag ttatgtatgc cagacctaat atgagctgcc accaacaccc ctagaacttt 240
cagccatggt gtcttcagaa ttgtagcgca tttctgaatc tagcaaatcc tccttttacc 300
cgttgaatgt tttgaatgcc ctgactctac cagcgcccat aaatgatctc tagaaggact 360
gttagtacca acctgttttt caactttgaa gctaaaaacc ctgatatggt aatattatgg 420
tgcatagcag aggtctcgga aaaaaaatat ttctgttcac tttactttca ggttaaaaat 480
gtttctaaca cgcttgcaac ttcccttatg gcattaatct tgttgaggga gagagacaga 540
atcctggact ctccaaagta tttaactgaa agtagggcct gctctgacag ggcccatgtc 600
ccacaaggct ggcttnggcc tcaggggggg gctttggctg gtgcttggga tgaaaattgn 660
tggannengg tntttgggga taaanggacc aaanggacca gccaaaagcn aaaaaatngg 720
gnttttaaa ngccttgggg ggnttacctt tttcntttaa angnnggttt naaagnatta 780
gggctaaang ccantttnca aaaaaangct cccnananaa aatggtggaa aagggnccct 840
tttggncgac aggnccttg nggaaaattg cccccancng ggccctttt tgnccccccc 900
nncccaaaaa aaagntgggn ngaagnnttn ttaaaaccct nnnggngccc nttttttng 960
nnaaanccnc cnccnngggg gncgccccnc tttnttttntt ntnttcccng ggngnccnnt 1020
ttttttncgg cngacccnnc ggggntcaan nnctgnanaa gnngntatct ggcngggnnn 1080
gcgcnngaaa gnnnnnggnn ncngnggggg nnnncgcncg nnannnttnt gnggggnaaa 1140

aaaaaaganc cctctnttnc tctcttntnt naanntnnnn ngnnnnnnan ncnngcnnnn 1200
gnngngnngn nnnnnnngnc nnncnnannn ggggggnggg cncncncnnc nnnnantnng 1260
gggcgnctcn tnnnnnnccc cnctncgggn nccnnnncnn ggngngngcn nntntngnng 1320
tccngnntgt gtntgnnnng ncnnncncnc cncgnnnnnc tnnnnntntg nntnngnnng 1380
ggggngnncn nncccncncg tgnnnnntnt nnnnnnnnnn nnganggnna nnncnnncnn 1440
nnnnnnnnnn ggggngcnnn nncnnncnnn tnnnnnnngg gnggnggggn gnnnnnnnnn 1500
nnnggnnnng nnnnnnnnnn nnncncncnn nnnnnntgng cgnnnnnncn nncnnngnnn 1560
nnnnntnnnn nnnnnnnnnn nnnncnnnnn nnnnnnnnnn nnnnnnnnng nnnnnnnnnn 1620
nnnncnnnnn nnnnnnngng gnnnnancgn tgngcngnng tnnnnnnnnn nnnnnnnnnn 1680
nnnnnnnnnn nnnnnnngnn nnnnnnnnnn nnangnnnnn nnnnngnnnn nncnnnnnnn 1740
gnnnnnnnnn cnntgcgagc nnnngncnnn nncnnntgnn nnnnnnngnn tcgcncnnnn 1800
nnnnncgngg ggcgntnnnn nccncccgcn gntgncnnnn nngncnnnnn ncnnnnnnnn 1860
ngnnntnncn cnnnnnnncg nnnnnnnnnc nnnagngnnn ngngnncnnc nncnnnatnn 1920
gannnnnnnn nccnncnnnn nnnnncgnnn nngcnnngnn ngnnnnnnnn nnnnntcncn 1980
ncncnnngnn nnngnnnnnn nnncncncgn gngnnnngnn cccgtccgcg cgngcgcgg 2039

<210> 41
<211> 319
<212> DNA
<213> Homo sapien

<400> 41
ttttttttt aaaaaaaaag agtttattta gaaagtatca tagtgtaaac aaacaaattg 60
taccactttg attttcttgg aatacaagac tcgtgatgca aagctgaagt tgtgtgtaca 120
agactcttga cagttgtgct tctctaggag gttgggtttt tttaaaaaaa gaattatctg 180
tgaaccatac gtgattaata aagatttcct ttaaggcaga ggctggtcga gatgctgctg 240
ttatcttctg cctcagacag acagtataag tggtcttgtt tctaagattc ctaccaccag 300
ttactttggg ccaagtatc 319

<210> 42
<211> 524
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(524)
<223> n = A,T,C or G

<400> 42
ccttttttt ttttttttt ttttctgatt tcaagtcaag atttattgct ttacaaacaa 60
acattatact tggtcttaat agaaaaatga caccagatac atccaaaata catttcacat 120
tgggatagct gccagttcag cacaaaacat acattactag gagcagggag gcatgaaaat 180
aaactatatc ttacttttg gtacgtcagg aacacttttg cctgaagtaa gcccttagt 240
actatttttt attttattta ttttttaat ccacccatct gcacactggn cctttagtac 300
tctttaagta taaaacttta cttgtcctgg gctttgaccc ttgtgtttga tctaaatgac 360
atttcaaaca taaatgtctt ttgactagtg cgcttactgn tatgtacana atttaaaatg 420
tgatcgttng aatntaaaat ctggtttgat acatgatata aaagttgtat atttaaaatn 480
caagaaatgt ttttggggaa tatttctact aaagaatttt aaat 524

<210> 43
<211> 103
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(103)

<223> n = A,T,C or G

<400> 43
ccttttttttt ttttttttgc nngaaataag gaatctataa atctgaaata aagaaatccc 60
attttaaatt aaattgttaa agagacacat aagaaaaaac act 103

<210> 44
<211> 425
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(425)
<223> n = A,T,C or G

<400> 44
gtcgacaaga taatgtactg acatctctag caatcttttt tgccagtggc tttaaattgc 60
caataagtta aagaatattg ttcctatggg ttaaattttt attcttattt tcacatttaa 120
atttattttt cttaattttt gtggatacat aatatgtgta tatatgtatg ccatatatgg 180
tatattttga tgcaggcata ctctatataa taatcacatt agaggaaatg agatatccat 240
tacctctagc atttattctt tttattacaa gncaattcaa ttgtacactt tttagttatt 300
tttaaattta caatgttatt gattacaggg tcatttttat ggtcataata aaaaatttta 360
tacaaaacgt gtaaaatcta tacatttctg agttctgaat aaatattttt taaaaatttt 420
aaaaa 425

<210> 45
<211> 492
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(492)
<223> n = A,T,C or G

<400> 45
gtcgactgcc cccaccgctg ggcggcgctg cggggcaccc aggctctgca gtcagcgccg 60
cgccgggaat cctgtacccg ggcgggaata agtaccagac cattgacaac taccagccgt 120
acccgtgcgc agaggacgag gagtgcggca ctgatgagta ctgcgctagt cccacccgcg 180
gaggggacgc aggcgtgcaa atctgtctcg cctgcaggaa gcgccgaaaa cgctgcatgc 240
gtcacgctat gtgctgcccc gggaattact gcaaaaatgg aatatgtgtg tcttctgatc 300
aaaatcattt ccgaggagaa attgaggaaa ccatcactga aagctttggt aatgatcata 360
gcaccttgga tgggtattcc agaagaacca ccttgtcttc aaaaatgtat cacaccaaag 420
gacaagaagg ttctgtttgt ctccggtcat cagactgtgc ctcangattg tgttgtgcta 480
gacacttctg gt 492

<210> 46
<211> 499
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(499)
<223> n = A,T,C or G

<400> 46

cctttttttt ttttttttat aacatttata taatgtgcta acaatgaatc catccatgat 60
ttattgtttg taatgaactt aaaataaccc tttacaaatt aaaatcattt tttcaaacat 120
gacttcatat tgaaatggtt ctgttaaaaa agtaaaagtt gaattttcca gccaatttag 180
catctaggac ctgaatcttg ccaatatcct acccactatc ttcattccta cctcctaccc 240
cttcaaatca gctcctccag actttcctat ttctgtcacc ccagttcaaa atggttttca 300
ccatgcattt gatgtaaaat gtgcaagtgc gatatgactt cacaaagtat caattgtgtg 360
gacaatgata actactgtga cactgctagc acccctggct aaaagtaaga agcaacaaaa 420
ttacacaggg ttcctttctg atgaatgcag nanggattca agaaatccca ganctggaaa 480
aagattttca atagatctg 499

<210> 47
<211> 537
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(537)
<223> n = A,T,C or G

<400> 47
gtcgacattt ttctgaggaa tagtttgtga ttccaatgca ggtgtcttca ttaccattac 60
ctctacactg cagaagaagc aaaactcctt tattagaatt actgcacatg tgtatgggga 120
aaatagttct gaaaggctag aatgatacaa gtgagcaaaa gttggtcagc ttggctatgg 180
agtggtggca ataatctcta aacattccaa aagaccatga gctgaaccta aactcccttg 240
gaatctgaac aaaggaatat aaaattgcca tttgaaaact gaccagctaa tctggacctc 300
agagatagat cagccagtgg cccaaagcca tttcaagtac agaaattata gagactacag 360
ctaaataaat ttgaacatta aatataattt taccactttt tgtctttata agcatatttg 420
taaactcaga actgagcaga agtgacttta ctttctcaag tttgatactg agttgactgn 480
ttcccttatc cctcaccctt tccccttccc tttcctaagg caatagtgca caactta 537

<210> 48
<211> 556
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(556)
<223> n = A,T,C or G

<400> 48
gtcgactttt ttttttttt ttagnnntat aaaatatttt atttacagta gagctttaca 60
aaaatagtct taaattaata caaatccctt ttgcaatata acttatatga ctatcttctc 120
aaaaacgtga cattcgatta taacacataa actacattta tagttgttaa gtcaccttgt 180
agtataaata tgttttcatc ttttttttgt aataaggtac ataccaataa caatgaacaa 240
tggacaacaa atcttatttt gttattcttc caatgtaaaa ttcatctctg gccaaaacaa 300
aattaaccaa agaaaagtaa aacaattgtc cctctgttca acaatacagt ccttttaat 360
tatttgagag tttatctgac agagacacag cattaaactg aaagcaccat ggcataaagt 420
ctagtaacat tatcctcaaa agctttttcc aatgnctttc ctncaactgn ttattcagta 480
tttggccagt acaaaataaa gattgggtct caactctctc tttcattagt ctcaagngtt 540
cctattatgc actgag 556

<210> 49
<211> 355
<212> DNA
<213> Homo sapien

<400> 49
gtcgaccgag cctctcccac cctcagtcgc atagacttat gtgttttgct aaaattcagg 60
tattactgaa ttagcgttta atccacttcc tttcttcttc ttctaaaata ttgggcactc 120
ggttatcttt taaaattcac acagaaaaat tccgtttggt agactccttc caatgaaatc 180
tcaggaataa ttaaactcta gggggacttt cttaaaaata actagaggga cctattttcc 240
tctttttat gttttagact gtagattatt tattaaaatt ctttaataat aggaaaaggg 300
gaaagtattt attgtacatt attttcatag attaaataaa tgtctttata atacc 355

<210> 50
<211> 507
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(507)
<223> n = A,T,C or G

<400> 50
cctttttttt ttttttttaa aaaaaaaaaa ttctgtttat tgtaataatt aaataagagt 60
aaacatttta aaacatataa aaataacttt aaaatatagt aacactttac aaaatatgta 120
tctaattaaa aatacattaa catagcatcc ctcaaactat acaaatatag aatatatatt 180
catgaaattc tttanaaata taacatctat tctttgaata aagcttaaaa tttgtttata 240
attttcaaac taanaaaaga agtagngaat aatagctcca tccaatttat aattgtctta 300
aagagaatga ttatgtatca tttcttgctt gtcttttcta atacccagtc aatcacctgt 360
acagcattgt tgtttgctgt tttcttcatt tcttcaaata gacccttga aagtttttaa 420
gatcctttag atagaactta gagatttcaa agagacgctg gctgcatgca gtgaaacatt 480
catgagtctc ggtaatactg ngtttct 507

<210> 51
<211> 538
<212> DNA
<213> Homo sapien

<400> 51
gtcgacgcaa aagtttgact aaactttacc tttttatagt ttcacttttt aagttatatt 60
tagaatatat tgatagatta taaattgatt gtgaaacttt tttctgaatt ttttcaacat 120
gttttactca gttacatgag ttaaaggata ttttcagtcc tgttatcttc aattgcagtc 180
tttaaaaaaa cccaccctat tgttctactt gttatatgtc tattcataca gtaaattcat 240
ttcaaggttt atgccagtgg gtattattgg tgctttttga agttgaggtg aaccatccag 300
gaaggtcttg ttaatgttat gttcatctat aatggcatag gggaaatata tatatttta 360
atattgtaaa catttgtact gaataacctt tttttccccc cctccgcaag caaaactggt 420
tgaacagcgg atgaagatat ggaattcaaa gctctaatgg acctttttga agagaagttg 480
tggcttatgt ggagtttaca tgggcctctg atggaagaaa gctaatctgt ttagtatt 538

<210> 52
<211> 504
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(504)
<223> n = A,T,C or G

<400> 52
cctttttttt ttttttttta aagtacaaat tcagtttatt catctgttta tgacacagta 60
cacaggaggc aaagtgtttc acatcataga cttcacttcc aactccttgg aatgttcatt 120

tctttggctt acaggagaga ctagacagga aggccaggca atgcttaggc aactaaaatg 180
aggttggggg taatgctaac gtcaccctca cagggatggc cacggggact gttattcgca 240
agctggtttt ctagacctgt tagctggaag catggtgagc accatttctg gacgctcagg 300
ccgtntcggg cttcagtcat ntccaccaca caggtacagc agcgctttct ggtagtcgcc 360
cttagtgtct tgctggatat aatagtacag ggacttgccg tactttctct tgaattcaga 420
cctaattttc aacatgtcca cttcactgng ggagaccatg attctgatca ggacccttat 480
ctcgcgtccc cttgcccttc atgg 504

<210> 53
<211> 489
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(489)
<223> n = A,T,C or G

<400> 53
gtcgacttta gatgtacagg ctgacanana agattcccga gagtaaatca tctttccaat 60
ccagaggaac aagcatgtct ctctgccaag atccatctaa actggagtga tgttagcaga 120
cccagcttag agttcttctt tctttcttaa gccctttgct ctggaggaag ttctccagct 180
tcagctcaac tcacagcttc tccaagcatc accctgggag tttcctgagg gttttctcat 240
aaatgagggc tgcacattgc ctgttctgct tcgaagtatt caataccgct cagtatttta 300
aatgaagtga ttctannatt tggtttggga tcaatnggaa agcatatgca gccaaccaag 360
atgcaaatgt tttgaaatga tatgaccaaa attttaagta ggaaagtcac ccaaacactt 420
ctgctttcac ttaagtgtct ggcccgnaat actgtaggaa caagcatgat cttgntactg 480
tgatatttt 489

<210> 54
<211> 577
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(577)
<223> n = A,T,C or G

<400> 54
ccttttttttt ttttttttttt aagaactcaa tacatggctt ttaattattg tctataattt 60
aaggaaataa tcacctacaa ataggatgtt tctcaagttg gcttacaaat ttgttacttg 120
gcagactgaa aacatttccc acagaacaaa tattatacac aatggttggg ttcctttggt 180
taatgcataa tgtttactcc ataatttatt tacccacaaa catgaattga acatttcttt 240
gtgccanaaa ctattctaac actagaaata caatagtaat gaacaaatag aaaaaaatcc 300
tattgtcatt ggtattacat ccatagtttt ttctccaaga gaataaaagt aagtaaaata 360
tatagaatta tagataatga tatatgctat ggtgaaaaac aaagctgggt aaagggatag 420
agaatggggg aaggataatt ttaactgatt attagtagaa tgtactagta tctctgttct 480
aaaaggattt aagataggta ttacttaccg aacctaagta ttacaaataa aatagcaatg 540
cttacactag gaaagacttt caactgagaa gcattat 577

<210> 55
<211> 483
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature

<222> (1)...(483)
<223> n = A,T,C or G

<400> 55
cctttttttt ttttttcac caataattat tttattcagg gagtaaatgt tattaattgc 60
caaaatacga attttaaatt tgagaagtac agatttgtaa gtatatattt gtttgaatag 120
tatcanattg gccttttatt ggcttattgg tatttagngc cagcacttac aatgtgaact 180
cagcaacaga agataattct tatgaaatca acattcaact tacatgaaat aacttaaaaa 240
cttaccaaca atagtctaat gattatatac ctttaccaaa caatgtctaa tgaaagtcca 300
aatgtaaaaa tttaaaaatt aaaattatag aatataattt ttacacatca attgttttgt 360
agcaccatct cgcaaagnaa atatcatgtt tattctgtag ctaaaatttc tccccacaag 420
cagaaattgt ttggaatata caaaaagaca acccattaac aagtaacttt aagtaatgta 480
gtt 483

<210> 56
<211> 521
<212> DNA
<213> Homo sapien

<400> 56
gtcgaccaga cttaagcatc gagtttttac catcttccac tttaagctaa gttatgatac 60
ctattccatt cacaattggt gttcttttta aggtttgcaa atttcagcca attttgtagc 120
taagattgtt ctgatcagct caaaaagatt tggcttagtg ttttcattgc aaattataat 180
tgctgtagag ccacacacaa cttttgaact tttaattata agtgttatgg ctaaagttat 240
ttactgaaaa tttcagtaaa atgtgtgaat gtttctttat gtattaacct catagcagta 300
aatgacttgc tgttgtttaa tttttctaag gcatcttaat agacttctgt tgaaaacttc 360
agtgttaaca tttttatagt ttgtactaaa tttaaccgtg atataaaaat gaattttatg 420
catagatcag gaattttaaa ttaaaggttt tttctttaaa aaaaaaaaaa aaaaagggcg 480
gccgctcgag tctagagggc ccgtttaaac ccgctgatca g 521

<210> 57
<211> 542
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(542)
<223> n = A,T,C or G

<400> 57
cctttttttt tttttttaca acttcacatt ctttaatgtt cattcagaat attaaatgcc 60
attaattgac catcattatt ataaaattta ctatttagat aagtgagttt tagtacagtg 120
ctatttaaag tatggaactg ttactggtgt gtgatcagta cagaaattga gactaagcat 180
ttagaaacct agagcaattt gacgtagcaa tcttctgtct gttgaatcta ataacaaaaa 240
aaatttttttc aattttgcat atcttttttaa aatttaattt gtcaaggaat tcatttttag 300
catattttac aaaaacatca ttctcctatg gagactattt ggaaatacaa ataagaaaac 360
tggttcttac cacagatagt ttttagaaac ctgttttagn gtaaagccat catttagtat 420
aaagncatct attattactg ttactctgaa gtggttactg agcattacaa cagtnggtng 480
gattataagt ttgtttacta aanatgctag gatttattaa ctcatgtata tatttattga 540
ga 542

<210> 58
<211> 261
<212> DNA
<213> Homo sapien

<400> 58

gtcgacagag aaggtctatg tcaacagagt tgttatctca tagagccagt tttcaaagct 60
ccttctgcat tgtcactcac tgatcaggtg atgaattctt cctagatagt cgcccactcc 120
acctcctact taacctgaga ctcattattt agctatttct gcttttgtaa aaataattca 180
gatattaaac tccaatttta atctatcatc caagggtaga tgtagttgct tagtagcatt 240
ttggaaaaaa aaaaaaaaaa g 261

<210> 59
<211> 480
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(480)
<223> n = A,T,C or G

<400> 59
ccttttttnt ttttttaaa atatagaagt tctgagttag acctgtttag ctcanaatag 60
tgggctaaac taccataaaa ttctctgtat atcttaaatg gtaatgggtc aaaaactcca 120
gaaaatcatc agttgataac acacctacag ataagtgcat gggtaggagg ggatagccaa 180
gtgcccatga taatttgacc tcagtaaatt aaactgggca atacacatat ttgctattct 240
gatactgcat tagacttata aaattccatc taataagcat tcataaaact ggacctctct 300
gtatatatct agcttagaca gggataggga aaagaataac tgaagaaact agcttacaat 360
agctaggttt cgtcaggctt attctatcca gccagaaacc accaccagag agaagctgag 420
ccattcagct gnctgtctcc tctccctctg tttgaatagt catgcctagg ccttgctgca 480

<210> 60
<211> 493
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(493)
<223> n = A,T,C or G

<400> 60
ccttttttnt ttttttggt ccttctgttt atttcatttt ggatactcag tgaatgttaa 60
ttaaccagga aacttaaaag ttatttcaat tatgaacctc ttcaatcctt catcaattat 120
tttgagtatt ctggtcttaa aaacatctct ttcttctaca aacttctgaa agagatgaac 180
acctccacct acaccaaaat aatgtgcttt gctggccaaa agtacacgtc cattttact 240
taacagtcta aggaaagtct ggtgcaaatt actataataa tctgggttgt aaatggtttc 300
tgaggtgaga atgagatcat attttacaaa aagtttttca ctacttagta caagcttaca 360
aaactcagac cactcaccag aaaaaaatcg gcatttatat agttgngtta cttttggttt 420
cctgcatctt ttcacatctg gctcatttac atcattttct tcatcttcca aagtggagtt 480
agctactaca tta 493

<210> 61
<211> 532
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(532)
<223> n = A,T,C or G

<400> 61

ttttttttttt ttttttgaa aaatataaaa ttttaataaa ggctacatct cttaattaca 60
ataattattg taccaagtaa ttttccttaa atgaactctt tataatgcat aatttacagt 120
ataagtagaa caaaatgtca tgacaaaagt cattgagtac aagacttgta ataaaaaggc 180
ataaaatata tttatacata aacccctttc aaaaaacaag ggaaagcttg agccctcaat 240
atagggcgac acacggagcg ggtgaccgtg caggtacagg tactgtactg atttaaagtc 300
aagcactaga gatagnggat taatactctt ttgccgtaca ctatatacag atgtatagta 360
caagtaacaa tggcaaacag aatgtacaga ttaacttaac acaaaaaccc gaacatcaaa 420
atgaaggtgt gtggaggaaa ggtgctgctg ggtctcccta caactgttca tttctttgng 480
gggcaggggg tagttcctga atggctgngg tccaatgact aatgtaaaac aa 532

<210> 62
<211> 567
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(567)
<223> n = A,T,C or G

<400> 62
gtcgactttt ttttttttt taagtatttt aggcatattt aataaataac ttcagtaaat 60
agcactgtaa aaagtgaact gttaaaacta aaggcactta aaacaagaat gtgactagtg 120
tgaaacaaga tgggcaactc aaatggtgag aagtaaacat acagtggtct gttatggcac 180
taactcaaag taagactcgc gtaggtgaga gctgttgcat agccacagta taacttcaca 240
tgttcattaa aaaggcaaat tgaccgctaa aacttcaaag aaaaagtact cataaaaaaa 300
gtcttacccc aaaattgcaa acaaatacat taaaagatta gaagaggtga tagaaagcac 360
cagacattaa acaaaataaa aataataaaa taaattcaac tcaaaaggtc cccattcagc 420
aaatactttg taaaagtatg gcctgtatgt aaatagttgc taaatcaagg acttttagc 480
agaaaattgc tcggttcttt tatctaaggc ttgaatttgt aaagngaagg cataaaagtt 540
nccaaacatt aagtaactct taaaatg 567

<210> 63
<211> 247
<212> DNA
<213> Homo sapien

<400> 63
gtcgacaaac aaacttggct tgataatcat ttgggcagct tgggtaagta cgcaacttac 60
ttttccacca aagaactgtc agcagctgcc tgcttttctg tgatgtatgt atcctgttga 120
cttttccaga aatttttaa gagtttgagt tactattgaa tttaatcaga ctttctgatt 180
aaagggtttt ctttcttttt taataaaaca catctgtctg gtgtggtatg aaaaaaaaaa 240
aaaaaag 247

<210> 64
<211> 330
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(330)
<223> n = A,T,C or G

<400> 64
ccttttttt ttttttttt tttttgacat ggagtcttac tctgtcaccc aggctggagt 60
gcagtagtgc aagctcggct cactgcaacc tcaggcagga ctatttttaa ttatttttaa 120
tacctgcaaa agggaatctg cacatgcaca tccgtgtttc tacanaaatc tgcgatcgat 180

ggcagatctg tttgcctttg ngtgtccaca tgaaccattt ggcaaaggca tccaatgcta 240
acggggccca ccaactacaa cggaggcaac aactctgngg attttnnttc acagaaagag 300
taaaatttca ttcaaccgtt ccatgtcgac 330

<210> 65
<211> 486
<212> DNA
<213> Homo sapien

<400> 65
cctttttttt ttttttttact aggcaaagaa ctttattaat ctttgtttca aacttgattc 60
ccaggcttct tcggcttaat tagctgcaaa gaatgaattg tgtataagca aaaactgaaa 120
agagctgcag tgtccaaggg gcttgggctt aaaaatatta gagatctaga ttttatcaga 180
tccataaaca aaaatttctt aaaaagcagt cataatataa aatagcagct cccagtaact 240
tcttcaggtt ttatcttcag aagttgactc aattcagttt gcctcattct tggaagcctc 300
atcaaaattc tccacaagat ctggaacttc atcatcatca tcctctccag tagcaagtgg 360
tgcttttcca tccacagatt gtttgggcag agcttcggcc agtctcctta aactagtcag 420
actatccgca ccaagctggt ttaagatgct gggtagcatt tctgtcagct gctttgtctc 480
agcatg 486

<210> 66
<211> 503
<212> DNA
<213> Homo sapien

<400> 66
gtcgaccgtc agacagcaac tcagagaata accagagaac aaccagattg aaacaatgga 60
ggatctttgt gtggcaaaca cactctttgc cctcaattta ttcaagcatc tggcaaaagc 120
aagccccacc cagaacctct tcctctcccc atggagcatc tcgtccacca tggccatggt 180
ctacatgggc tccaggggca gcaccgaaga ccagatggcc aaggtgcttc agtttaatga 240
agtgggagcc aatgcagtta ccccccatgac tccagagaac tttaccagct gtgggttcat 300
gcagcagatc cagaagggta gttatcctga tgcgattttg caggcacaag ctgcagataa 360
aatccattca tccttccgct ctctcagctc tgcaatcaat gcatccacag ggaattattt 420
actggaaagt gtcaataagc tgtttggtga gaagtctgcg agcttccggg aagaatatat 480
tcgactctgt cagaaatatt act 503

<210> 67
<211> 519
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(519)
<223> n = A,T,C or G

<400> 67
cctttttttt ttttttgaa taaatttttt ttttatttt acaccataat ccaattctag 60
ttatcttaat tgaatttgaa aacttttca attgcattaa atttacaaaa aagttctccc 120
acattacact aaagcattcc tcatgtttca cttccagtac tcagatactg aatgagtaaa 180
atcattttat tggctctctt ttaattaact ccttcaaatg cacattgttt aaaaactgac 240
taggtcaaaa atagttacnc ctgcaggttg acctattcag actttgccaa actcctccaa 300
gttcaatata aattgacgtt ttcagagtac aaagtcaatt ttacggaaac gctgttcctc 360
cttttccatg gagccaatct gggtaatttt ttcattaaaa ttcttcttct gcctgtttgc 420
tgcggaactc tttgagctgc tgtagccgct cgatagtttc anaaatggtg cgttccccgt 480
ggaccttatt gtcctcttgt gcggatatna acagtgcca 519

<210> 68

<211> 495
<212> DNA
<213> Homo sapien

<400> 68
gtcgactaaa gctgaagaga taaaagaggt tgtggggcta tgtcttaaga caaaagaaca 60
tttagaaaac ctcaggaaat gatcagagtg ggatagatgt tactagaaga aacaaagaaa 120
ttgaattcaa ttaggagtta gaatcattta caaagcaatg gggaaagtaa gcccctaaaa 180
actattgtag catatagtaa ccagagccaa actctcataa tatattcccc aaggcaaaag 240
aaaaatattt acaagattgg cgttgtttta tatgtttgca aacttattta ataagtctgg 300
ctttgtagat ttcatatctg agtctgcatt caatcaaaat gtcttggcta aacttcatga 360
aaaaacccca gcctcataaa ttagtagttg gaaaaaggag gcatatttag agctttttca 420
gataattgta tttctttgat acattagact ggacacacag tagtttgttt aaggttaatt 480
gcaatattgc aatga 495

<210> 69
<211> 525
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(525)
<223> n = A,T,C or G

<400> 69
gtcgacgcca ccatgttcga ggcgcgcctg gtccagggct ccatcctcaa gaaggtgttg 60
gaggcactca aggacctcat caacgaggcc tgctgggata ttagctccag cggtgtaaac 120
ctgcagagca tggactcgtc ccacgtctct ttggtgcagc tcaccctgcg gtctgagggc 180
ttcgacacct accgctgcga ccgcaacctg gccatgggcg tgaacctcac cagtatgtcc 240
aaaatactaa aatgcgccgg caatgaagat atcattacac taagggccga agataacgcg 300
gataccttgg cgctagtatt tgaagcacca aaccaggaga aagtttcaga ctatgaaatg 360
aagttgatgg atttagatgt tgaacaactt ggaattccag aacaggagta cagctgtgta 420
gtaaagatgc cttctggtga atttgcacgt atatgccgag atctcagcca tattggagat 480
gctgntgtaa tttcctgtgc aaaagacgga gtgaaatttt ctgca 525

<210> 70
<211> 511
<212> DNA
<213> Homo sapien

<400> 70
gtcgacattt tatatataat actactaatg gcatagatta acaaaatatt ttacatgtag 60
gaaaggacat aagattactt ttaaagaata gtatgaaata cacaatattc aaatgtgttt 120
gcaatgccta ccaaatttca aatgtgcctg gatcatgtat aaattaagga aagaaaaaag 180
gatcatgtat aaattaagga aagaaaaaat gtaagtatac aacctacacg gtaaaaacaa 240
aaaccaaaca cctggttaaa aatatctatt taagctcgag tgtataacct taaacaattt 300
gtgtatcact agaaaaatgg atttattagt aaaatttagg gcagagattt tattttggac 360
accactgcct ttgtagaaaa atccaaagtg gcataaaaag aaaaataaaa tattaaaaga 420
aaaaatatat attatcattc ccatgttccc atcctgttac tagcattgct gttctggtgc 480
atcaatcctg agtactctaa cttttgattt a 511

<210> 71
<211> 464
<212> DNA
<213> Homo sapien

<400> 71

ccttttttttt ttttttttgga agagcttctt gcactgttat aagaaagaac atgtgggaga 60
ttgcaaacaa agcaacataa agagtataca gcctgtagga gtctgactaa agtaaaaaaa 120
actcatgtct ttgtttagtg agtatctgta tactaagtta atgcaatgcc aattagattc 180
aaattaaatc aagtacaagc aaatgtactg aaagtattag gaatgcatca tctactttgc 240
taaataattt gcactccgca ttctgcaatt acatgagcat gccattggta taatattggt 300
tatataacat ttaacatgtt agtttttaaa agaatgtaga tacattcata gagatcagta 360
tttttacaga tgtttttact ataaaaggaa ccatgtataa cattgatttt taccttcagt 420
tttgataata ggctgaagac tgccttcaat cactttaatt tttg 464

<210> 72
<211> 234
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(234)
<223> n = A,T,C or G

<400> 72
aataaaannt gaacaaaagg aaaaggtgga tataaagtgg aacctgtggg aaagaggcaa 60
gggctgcagg acagaagaga ctgggaactg caggggccct gggactcagg aggagatgct 120
gattcagctc ataggtgacc cagtcctggc cccggctgtt cccaagagaa ggctgtaagt 180
acccagggag gtggtaagca ggatggagga aaaatcagag gactgggggt cgac 234

<210> 73
<211> 143
<212> DNA
<213> Homo sapien

<400> 73
gtcgactaaa taagtcaatt cctggaattt gaaagagcaa ataaagacct gagaaccttc 60
cagaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 120
aaaaaaaaaa aaaaaaaaag ggg 143

<210> 74
<211> 533
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(533)
<223> n = A,T,C or G

<400> 74
gtcgacataa tctaggcatg aagagcaaaa atatcccttc cggagtcttt gaagctgaaa 60
atataaaaca aataaaaaat aaaaaaataa aaacccacaa aaatgttgaa ccaaacctcc 120
ctgctaatct ccatgcccac gttctttccc accctgttcc cagtcttctg acaaactgtg 180
tacatagcgg actcctcctt tctcctccga ggtggtttta aaggcttttt ggtgtataga 240
agtttgtcca tttgtaaaac tccggattgc gttcctcccc gccttccgcc ccttcccttc 300
cctaaagtga tgggctttct cttttctctt tttagtttac ccggtttctt tttaagtaat 360
gtggaagaaa atggtttatt ttgtattgng gtattgaata ttgngttcct ttttatgagg 420
caaacctgat tgtaaacttc atgtaactat agactggaaa aaaatgagcc gngccaaaag 480
tctnccccttc tgtttcttca gcacattgac ccatnncaca cacatacaca cca 533

<210> 75
<211> 485

<212> DNA
<213> Homo sapien

<400> 75
gtcgaccttc cctaggctgt ttctgctggg cgctccgcga agatgcagct caagccgatg 60
gagatcaacc ccgagatgct gaacaaagtg ctgtcccggc tgggggtcgc cggccagtgg 120
cgcttcgtgg acgtgctggg gctggaagag gagtctctgg gctcggtgcc agcgcctgcc 180
tgcgcgctgc tgctgctgtt tcccctcacg gcccagcatg agaacttcag gaaaaagcag 240
attgaagagc tgaagggaca agaagttagt cctaaagtgt acttcatgaa gcagaccatt 300
gggaattcct gtggcacaat cggacttatt cacgcagtgg ccaataatca agacaaactg 360
ggatttgagg atggatcagt tctgaaacag tttctttctg aaacagagaa aatgtcccct 420
gaagacagag caaaatgctt tgaaaagaat gaggccatac aggcagccca tgatgccgtg 480
gcaca 485

<210> 76
<211> 417
<212> DNA
<213> Homo sapien

<400> 76
cacgctggtt ttgcatcttc aggagacgct cgtagccctc gcgcttctcc tcggccaatt 60
cgcggaagaa gtggctcacg ccttccagag ccacatcatc gcggtcgaaa tagaagccca 120
gagagaggta ggtgtaggag gcctgcaggt acaaattgac caggctgttg acggctgcct 180
ccacgtcggt ggaataattc tgacgaatct gggagctcat ggttggttgg caagaaggag 240
ctaaccacaa aaacggtgct ggcaggtccc agaagcagga gatggccgag aagatggtcc 300
cggaggttgc aagcggagag gaaatcggag ggcggtcgga ggctggaaga gagtccccgg 360
atctgttccg tccaaacact gttgaagcaa gagacagacc cgcgggaccg cgtcgac 417

<210> 77
<211> 547
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(547)
<223> n = A,T,C or G

<400> 77
gtcgaccttt tattaagaat atattttatc aggcattttg ataacaaact gttactctaa 60
gtataggtga tttacccagt gtattttaaa aagtaaatga atcccactgt agtttttctt 120
gaaggaaaaa tcatttctcc agttgctgag gggtactaaa agcttcatac acattagcag 180
caaagtcttt cacttgctcc attgtcaaca gatcctgaac aaaatgacta ggtgtttcac 240
tgcaaactga atggatctgt ccgtttacta ttggaattat cttagctaaa ggcaggctga 300
cactggaaag actattcata gagttaccat gttgcaggtc ctgttcagta ggtcgaaaga 360
actcagccat attgtctaga agtctactaa aacctcggtt taaacaggta ttcaaaactg 420
tactaaaatc tgggctttcc aacatgtctc tagtttcatt gagaagttta atagtggtaa 480
tgtctcgagg agaangtcca caggcctgca ctgctaatgg agtttcttca tctggcatca 540
tataatg 547

<210> 78
<211> 499
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(499)

<223> n = A,T,C or G

<400> 78
ccttttttt ttttttttt tttnnaaaaa aaatcttttt ttatttcaaa gattgcttct 60
tatattgaag ctcatattaa agcaacagta caatgttcat aaaatataag tgtgatgccg 120
taacattttc ttacatgtca gaatactgat atttatatgt atactaaaat aagaacttta 180
aaattgtaca aatagataca ttaaaaatga catagaaata gggcgtctnt cactgaaaca 240
agacagttat atctggcacg tattagttta agatgaaagt agaagcaaaa agatttacaa 300
gaatcagcag taacaagatt gatgctcaag agacataatt gtacattgna ttgtacatac 360
attgtatggg tttaagctgg ctgaatntta tatatttcaa gtttaaaaat gcactacata 420
tagagtgtcc agagtttaag gcgaaattac agctcanaac tgntgncctt tctaattttg 480
gggaagcttn tttgacaac 499

<210> 79
<211> 370
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(370)
<223> n = A,T,C or G

<400> 79
ccttttttt ttttttttt ttttaaggag caatgacatt tcctagaagt tactttaaga 60
atttccctag agggtcgggt atcatctcan ccagatcttt ctcatccttc aaggccctgt 120
ttggtacagc ttgctaggaa gctgttccag actgcagcag ccctctctgg ggtctctcta 180
ccacttccca ggcactcana acttgtgcct cannanactg ttttgtggca ctgncccatt 240
ctctgattct ccatgtgagc tggttttatc ccatccagca tggctgtgaa atcctaaagg 300
ttcaaacccc agccactctt cacctatatt tcccccaaat ggctagcacg ggaaagggcc 360
caaaggtagg 370

<210> 80
<211> 428
<212> DNA
<213> Homo sapien

<400> 80
gtcgacaaaa agggaaggaa ggagagacag ataactctca gtcatttaaa aaactacaat 60
aaaatattat gaattatcaa ttagatcaaa gttcctcaca gctatattta tataggtaaa 120
aaaaaattaa ataggctaaa tgcccaaaaa tttaagactg gcaaaatata cttggctaaa 180
tactgtgcgt ctctattaaa taccatgttt cagaagaatt attaatgaca tgagaatatg 240
ctcaaaatac atattgatat gtgcaaatac atattgcaaa gtaagattat agaatgatcc 300
tagttcaaaa atgtcacata tatatgtatt taaaaaaaaa ggcagttaag atttacaaca 360
aaatgttagt ggtgggacct tctggtagga atacagattt ttttttattc agaagttttt 420
tgatgtcg 428

<210> 81
<211> 533
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(533)
<223> n = A,T,C or G

<400> 81

ccttttttttt ttttttttatt tttaaaattt ttttattttg aaataattat aaattatcag 60
aaagttgcaa acaaagccca gtcaggtccc atgtaccagt ttcactgcca ccatctttaa 120
aggaggatta gacgaatctg actgctaaaa gtggcccagg gattctggag aaaatccaac 180
aggtttgcta tcaggaaagc aatttcactt acaattcagg tttgactgca agtgaaagtg 240
gttgaaacaa gtgagaagnt gattgcttcc tcatataata gtctaaatgt aggtgtccaa 300
gcctggaata gaggtcctgg tcctctaagt tctcaggaac acaggcttct tttagccact 360
ccacatctct agggtgttgt cctcatggtc caaaatggng actggaattc cagccatcac 420
atntgctttc caggcagcaa aatggaagaa ggggcacana agaacagaga tgacaatagg 480
tataaacaag ctctcttttt aaaggagatt cccaggagct gctacatgac act 533

<210> 82
<211> 493
<212> DNA
<213> Homo sapien

<400> 82
gtcgacccgc gaagatgcag ctcaagccga tggagatcaa ccccgagatg ctgaacaaag 60
tgctgtcccg gctgggggtc gccggccagt ggcgcttcgt ggacgtgctg gggctggaag 120
aggagtctct gggctcggtg ccagcgcctg cctgcgcgct gctgctgctg tttcccctca 180
cggcccagca tgagaacttc aggaaaaagc agattgaaga gctgaaggga caagaagtta 240
gtcctaaagt gtacttcatg aagcagacca ttgggaattc ctgtggcaca atcggactta 300
ttcacgcagt ggccaataat caagacaaac tgggatttga ggatggatca gttctgaaac 360
agtttctttc tgaaacagag aaaatgtccc ctgaagacag agcaaaatgc tttgaaaaga 420
atgaggccat acaggcagcc catgatgccg tggcacagga aggccaatgt cggggtagat 480
gacaaggtga att 493

<210> 83
<211> 501
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(501)
<223> n = A,T,C or G

<400> 83
ccttttttttt ttttttgta ataaagacac tgcttttatt tagtttgata tgtttcttta 60
cagaatgcag aaaacacatc ttaaaatcat atagaaggaa ataaaaacac atcagtggtt 120
ggtgaacact tgaatgtgag attggctctc catctcacag agtccaacgg ccatcaccag 180
cccagcgctc aggggagcag gctgcctgca aaggcattgt tgctgttgtt attctgttca 240
ctgccccatc gcctccagtt gctatggcaa caggccattc tgggccagcc acgtctctgc 300
atggcagtgc ccaatggtgg agttgctagg ggcgacggag ctgtttggaa ggcctttcaa 360
agccctcacc tggaacattg ggaattgttt atttttgat gaggncatca gaaataatct 420
tcaccaggtc agatcccact tgtgctcctg tctctggggc accaggggaa actctgactt 480
ggaggcatga gcccagtcac c 501

<210> 84
<211> 454
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(454)
<223> n = A,T,C or G

<400> 84

cctttttttt ttttttttt ttttatgcta ataaaacatc ataatttaag gactacactg 60
catttttaa ttccataaat tataatcctt taacatatat gaaagtttca tattcttaaa 120
gngctttaaa atatatttaa tttttttaac aagtggaaaa gaatgtttct taaaagacat 180
ttaatttttt agtggaaatt aatattacca aaaacattct gtgcataaca atttgaataa 240
caatttttt atcttcaaga aatgggattt ttatataaaa tacacatgta gcactgaatg 300
ccaaagtgat gggtatccat ggtcanaatt caaaattaga ttcgctatta aacctgtctg 360
gtttgtgtcc tgagtgaana atgatctcga gctggggagg gaggtgcatt gggtaatcag 420
tgcttttgaa ggtgaatttc cttgctgnga aata 454

<210> 85
<211> 509
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(509)
<223> n = A,T,C or G

<400> 85
gtcgaccgct ctcagctctc ggcgcacggc ccagcttcct tcaaaatgtc tactgttcac 60
gaaatcctgt gcaagctcag cttggagggt gatcactcta caccccaag tgcatatggg 120
tctgtcaaag cctatactaa ctttgatgct gagcgggatg ctttgaacat tgaaacagcc 180
atcaagacca aaggtgtgga tgaggtcacc attgtcaaca ttttgaccaa ccgcagcaat 240
gcacagagac aggatattgc cttcgcctac cagagaagga ccaaaaagga acttgcatca 300
gcactgaagt cagccttatc tggccacctg gagacggtga ttttgggcct attgaagaca 360
cctgctcagt atgacgcttc tgagctaaaa gcttccatga aggggctggg aaccgacgag 420
gactctctca ttgagatcat ctgctccaga accaaccagg agctgcagga aattaacaga 480
gtctacaang aaatgtacaa gactgatct 509

<210> 86
<211> 520
<212> DNA
<213> Homo sapien

<400> 86
gtcgacgggc gccagggtct ttgtggattg catgttgaca ttgaccgtga gattcggctt 60
caaaccaata ctgcctttgg aatatgacag aatcaatagc ccagagagct tagtcaaaga 120
cgatatcacg gtctacctta accaaggcac tttcttaagc agaaaatatt gttgaggtta 180
cctttgctgc taaagatcca atcttctaac gccacaacag catagcaaat cctaggataa 240
ttcacctcct catttgacaa atcagagctg taattcactt taacaaatta cgcatttcta 300
tcacgttcac taacagctta tgataagtct gtgtagtctt ccttttctcc agttctgtta 360
cccaatttag attagtaaag cgtacacaac tggaaagact gctgtaataa cacagccttg 420
ttatttttaa gtcctatttt gatattaatt tctgattagt tagtaaataa cacctggatt 480
ctatggagga cctcggtctt catccaagtg gcctgagtat 520

<210> 87
<211> 171
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(171)
<223> n = A,T,C or G

<400> 87
gtcgacgagt acagtatcag ctgagctgac cttactctga ggactaactc ttttgctgga 60

agcggtttct gatttacagc tcttggtttc tcccagacat gttggtggga gagattttgg 120
tttttaaggg gttgttagat ggagtaaann ttctttaagn nttaattttt t 171

<210> 88
<211> 508
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(508)
<223> n = A,T,C or G

<400> 88
cctttttttt ttttttttt tttttgnagt aaaaaatctt tatttccaaa atgatttgtt 60
agccaaaaga actataaacc acctaacaag actttggtaa gaaagagact tgatgcttct 120
tataaattcc ccattgcaaa caaaaaataa caatccaaca agagtcatgt tacccattct 180
tagccattaa cctggtttta agtctccaaa atcaggattt taaaatgtac ccaactggga 240
ccaaatacaa acatgagaca ctagggnggc ttgtccttga ttaggaatca ccagcttaag 300
gaactttatc atgggctgag agttagatag atagcttana acaacattgc aaaagnggggt 360
gcttctacat gaggactttt ttccccccaa gtagaaaaat aattaaatct tgngtttctt 420
tatattgngc ttttttggg agaaagcaat tcatttaagg atttaaaaca tgttggatac 480
aaaggtagtt canagatgta ataatggt 508

<210> 89
<211> 508
<212> DNA
<213> Homo sapien

<400> 89
gtcgacggga taaatagaaa gcagaatgaa ttaatggaaa agaactcggc tgttaggcca 60
ttctctaaat tctagtttag ccaaaagttt atgtgtggtt tggggcttca tttatttatc 120
tcatgagtaa aatggaataa tacctaacag gcaggctctg gaagttggaa atcacataca 180
cacacacaca cacacagaca cacacacaca cgatcaatca tgtagctcat attagatgtt 240
caataaataa cagctactac agatgcctat cagttgagta agtagttcat taaattgagc 300
tcccaaaggt ctcttctctt cacatccata tccgtttctg cagcaatcaa atagatacat 360
gattgttttt ctgtaagaaa ttactgcaaa gagaatcttt ttctcctact aactgttcct 420
tctacctggt ataggagata aatgtacgtt tcttaattag ctgacttttt agtatgtcat 480
ttctgaagga aaaataaatt aaccttaa 508

<210> 90
<211> 531
<212> DNA
<213> Homo sapien

<400> 90
gtcgacacga gtcccgcgtt ctctccttga atccactcgc cagcccgccg ccctctgccg 60
ccgcaccctg cacacccgcc cctctcctgt gccaggaact tgctactacc agcaccatgc 120
cctaccaata tccagcactg accccggagc agaagaagga gctgtctgac atcgctcacc 180
gcatcgtggc acctggcaag ggcatcctgg ctgcagatga gtccactggg agcattgcca 240
agcggctgca gtccattggc accgagaaca ccgaggagaa ccggcgcttc taccgccagc 300
tgctgctgac agctgacgac cgcgtgaacc cctgcattgg gggtgtcatc ctcttccatg 360
agacactcta ccagaaggcg gatgatgggc gtcccttccc ccaagttatc aaatccaagg 420
gcggtgttgt gggcatcaag gtagacaagg gcgtggtccc cctggcaggg acaaatggcg 480
agactaccac ccaagggttg gatgggctgt ctgagcgctg tgcccagtac a 531

<210> 91
<211> 426

<212> DNA
<213> Homo sapien

<400> 91
gtcgacaatt gaggcctaca agagagggga gcctaggagc ttggattgac cttctagtca 60
accacctgac ttcagcacac cattacaatc gggagactaa accaacaacc agaggatcta 120
aaatgtcaca ttcagatttt caggaagaaa atcttcatta cagtggagca caaatgttcc 180
atacaagaca tcattgagga gccatgctgt ccccttctaa cctgaaacac attctttccc 240
atcctggttg ggcttctgta cctccttatt aatttatgaa cctgaagttg cttgaagtgt 300
tttgggctta ataaatgggg tgaaagtata ggtagcagta acacctacat gaaacaatac 360
accttggatc ttttaatcta aattactttt ctttttaag tctactttta aaataaatac 420
ttctgt 426

<210> 92
<211> 223
<212> DNA
<213> Homo sapien

<400> 92
gtcgactttt aaagcaattg actaggagaa actatttgta gcttatataa caaggactat 60
atataaataa aaaactattt ctatgaaaat cttaaaatta cacacagtcc gatgaaaata 120
atcatatatt aaaaaggcaa accagaaaaa taaatacaga tgaccaaaat ccatgtgaca 180
tatttggcct aattagtaat tagaaaaaaa aaaaaaaaaa aaa 223

<210> 93
<211> 486
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(486)
<223> n = A,T,C or G

<400> 93
ccttttttt ttttttttt ttttttttt tctcaaatat ccaattttat tttatcattc 60
tcgcattggg ggatgcgatc tgcagctagg atcggaattc ccaggcctat anattttaa 120
accacaccac aggggtaaac cttaaaagaa gngaaaccta acactatata tatttccatt 180
tctaaataca gtatattaca naagtttaaa tatnccacct ntgngtactt acaactntaa 240
aaagatncaa tanctctacc aattataaat aatgtancat ttcatattaa agacattatc 300
gtncaatgga anaataggaa ccctntaacg tatcactatc aaggttagng tctatatcta 360
cttganataa aatactgaaa attcagngta tgaagccaaa tcctgattta acaagttatt 420
ggtagtataa gtgataagtg ttanctgatg aagggaaggc aaatgtggta atttatatct 480
ctgaca 486

<210> 94
<211> 214
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(214)
<223> n = A,T,C or G

<400> 94
cctttttttt ttttttttt ttttttttt tttttngcaa cacaagtcaa tctttattga 60
aaactgcagt attaatacat aacaattctt gttacaataa acgtgctttt ganattttta 120

aatctgagct catctcatca gattgcataa aaaattaaaa tagtntcaat tgacacctaa 180
ctgaactggc tcaggatgga aattccattc cttg 214

<210> 95
<211> 463
<212> DNA
<213> Homo sapien

<400> 95
gtcgaccaga attcagagcg aatggtcaca gttggtcgct gggcaaaggg aatgagtgca 60
gactatgaag aaattttgga tgtacctaaa ccgcaaaaac ccaaaacaaa aatacctaaa 120
gttgttaatt tttgataaca gctagcacta tcatgagtta ctacctcatt gttactttct 180
aaaccaggcc cgcttcacga gttagagttg agctcccctg tagccaggac tatgctgtag 240
atatcagtat gatctgggtg tggccaaaaa caatttttctt tattctgtct atcaaatagt 300
acttctacca ctgtttggag aaaattgaag aaaagaataa gatgattaaa tgaattctct 360
aaaagaacat attttaagag acagaactta gacataacca agtagttgta tacctgattg 420
taacaatcat cttttataaa agcaaaatta tgcataaatg taa 463

<210> 96
<211> 606
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(606)
<223> n = A,T,C or G

<400> 96
gtcgacttta aaagtgcctc ggcatcctgt attacatgtc atagaattgt aaagtcaaca 60
tcaattacta gtaatcattc tgcactcact gggtgcatag catggttaga ggggctagag 120
atggacagtc atcaactggc ggatatagcg gtacatatga tccttagcca ccagggcaca 180
agcttaccag tagacaatac agacagagct tttgttgagc tgtaactgag ctatggaata 240
gcttctttga tgtacctctt tgccttaaat tgctttttag ttctaagatt gtagaatgat 300
cctttcaaat tgtaatcttt tctaacagag atattttaat atacttgctt tcttaaaaaa 360
caaaaaaact actgtcagta ttaatactga gccagactgg catctacaga tttcagatct 420
atcattttat tgattcttaa gcttgtatta aaaactaggc aatatcatca tggatacata 480
ggagaagaca catttacaat cattcattgg gccttttatc tgtctatcca tccatcatca 540
tttgaggcct aatatatgcc aagtactcac atggtatgca ttgngacata aaaaagactg 600
tctata 606

<210> 97
<211> 530
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(530)
<223> n = A,T,C or G

<400> 97
ccttttttttt ttttttttgta gatttttttgc tatgttactc aggctggtct tggactcctg 60
ggctcaagcg atcctcccac cttggcttcc caaagtgcca ggattatagg catgagccac 120
catgctcggc ctgctccttt tcttgaaaca cctcctctgt ggtttagatt ccaggagact 180
ggaatggtct gccctggtgg gctgctgagt cagggacctg aggtgtttgt tcactgggga 240
ggcgggttca gatcaggaat gtaaggatga tggaaagaag ggagtcactc tggtttggtg 300
ggactgggga gcaatcttga tcacggccac ttacagcttc tgccattgtc cttcaccact 360

atctcagcat ctcggtccct cacgatgtcc ctccagtcaa ttgtgtccat gtgacaaagc 420
ttatcgttct tctcaatata aacacccccc gacagaatct cggtgagctg agtcaagcgg 480
agctggcgca nagcgtggct ggagttggtg ttatagttca acatgacgaa 530

<210> 98
<211> 479
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(479)
<223> n = A,T,C or G

<400> 98
gtcgacggtt agtttctgcg acttgtgttg ggactgctga taggaagatg tcttcaggaa 60
atgctaaaat tgggcaccct gcccccaact tcaaagccac agctgttatg ccagatggtc 120
agtttaaaga tatcagcctg tctgactaca aaggaaaata tgttgtgttc ttcttttacc 180
ctcttgactt cacctttgtg tgccccacgg agatcattgc tttcagtgat agggcagaag 240
aatttaagaa actcaactgc caagtgattg gtgcttctgt ggattctcac ttctgtcatc 300
tagcatgggt caatacacct aagaaacaag gaggactggg acccatgaac attcctttgg 360
tatcagaccc gaagcgcacc attgctcang attatggggt cttaaaggct gatgaaggca 420
tctcgttcag ggggcctttt tatcattgat gataagggta ttcttcggca gatcactgt 479

<210> 99
<211> 502
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(502)
<223> n = A,T,C or G

<400> 99
ccttttttt ttttttgta agtttaaatt tatttttaa aaatgcttgt cttcctcact 60
agacaatcaa ctctatgagg gcagagacta tgtcaccact gtcccaccag cccctggcac 120
acagtaggta ctcaataaat atatgttgga aggatggatg gaggtaatgg atggaaagat 180
ggatggaagg atgaatggag ggatggatgt gacccagctg aagtgtgagt aggaacattc 240
tcttattatg ggtggaggaa agagagagga gattgagaaa ataagataaa atacattgat 300
gagcatcatt tttggtgttc gaaaagtagg attgaattag gactaataaa tctagagaat 360
tttacctctt tcaatgccca agccacactt ttctatcact ttgaaaccga aaaagtaaat 420
actttcccaa catttgcttt gctggtagga aatgctttaa taaaaatgca atctctangt 480
tgccatggca tcattaaaag aa 502

<210> 100
<211> 537
<212> DNA
<213> Homo sapien

<400> 100
gtcgaccctt tccataaatc cttgatgatt gacaacaccc atttttcctt ttgccgaccc 60
caagagtttt gggagttgta gttaatcatc aagagaattt ggggcttcca agttgttcgg 120
gccaaggacc tgagacctga agggttgact ttacccattt gggtgggagt gttgagcatc 180
tgtccccctt tagatctctg aagccacaaa taggatgctt gggaagactc ctagctgtcc 240
tttttcctct ccacacagtg ctcaaggcca gcttatagtc atatatatca cccagacata 300
aaggaaaaga cacatttttt aggaaatgtt tttaataaaa gaaaattaca aaaaaaaatt 360
ttaaagaccc ctaacccttt gtgtgctctc cattctgctc cttccccatc gttgccccca 420

tttctgaggt gcactgggag gctccccttc tatttggggc ttgatgactt ttctttttgt 480
agctggggct ttgatgttcc tttccagtgt catttctcat ccacataccc tgacctg 537

<210> 101
<211> 611
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(611)
<223> n = A,T,C or G

<400> 101
gtcgacctaa aatgaagtgt ttgaaatcag aaatctattt ctaatgtctc atagctttaa 60
aactattttt gtccttatac tcatacttgt tattttattt tattcatcct atatagccat 120
ttgactgaaa tgtagaaaat aatttattaa attgagaaaa tatgcaggca ttgaacaatc 180
tttcaagtat tttgaataaa aattcaaatt attatagatt gcctggaatt gttaagactg 240
tcagaaggtc agctcattga tagctaagta gtatacactc tgaaaaacag aatgtagaaa 300
tgggttttat aaaagctgac ctctagagta aaggaggacc cagcatgtgt aattcttcct 360
cttaatactt taagaccact aatttgagga cttatggttt ctcaccactg cactcttgca 420
gctttcaaga aagtacttaa gttttaaatg cccaggtgat ttctaagact cttgaataga 480
attggttggg ttcttctgat attgcatttt catgagaaaa aatttcagtg gtacattaat 540
ttttattttt ccttttgctt atagacttcg catatcattt aaagtgatgg ttcgagcttn 600
ctctggatac t 611

<210> 102
<211> 498
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(498)
<223> n = A,T,C or G

<400> 102
cctttttttt ttttttttta acgcatattt gtttttattt ataggtaact accacatgaa 60
ttataaagac aacaaaggat gtcagaatga acatggatag gtgtatgcat actacggcta 120
aggagaaaca atgttcctac atattatggg tagtgagaac attatctgta taacagggaa 180
ctgtgattat ttaaaaatat gcagaactta tttcatctgt gctttanaaa taactgtata 240
cagtgttata agttgaaaag aactcaaaat aactaatacc aaatatacac ctatgtatta 300
naattcaaaa aagctgcttt ctgtgaagtc aatcagctat attaaaaaat gacacaaatc 360
caaaacaaga tgcatgttat atataaaggg acattgtaag tttccttgct gcattaaacc 420
catggtttaa tccatgaaat ttccttttaa ttatcattta gacagaagca tgcaaatagt 480
ctcaggatct acttaaga 498

<210> 103
<211> 446
<212> DNA
<213> Homo sapien

<400> 103
gtcgactctt ggtgtttttg tatttccacc tcacccccag cacatagccc agtctcttgc 60
acaaattaag tacttaatgt gtgttgagct aaattgaata aaggattatt agcattagca 120
tattttgtgc cttggttgta taagctggtt gtttgttttg ttacctttgc aaatatttat 180
gattatcacc cccccacata ctaaattgtt tttaaaagtt ttgcctttcc ttcagatact 240
accccaggca atttgctgta gataatgtga ttgcttccaa tgacataatt atcccaaact 300

ctctgccccg gatatacttt gccaaacgaa atttgaattc tctgaataaa ttggtcatgt 360
cctaaaaaaa aaaaaaaaaa aaaaaaaggg gcggccgctc gagtctagag ggccccgttt 420
taaaccccgc tgatcagcct cgactg 446

<210> 104
<211> 286
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(286)
<223> n = A,T,C or G

<400> 104
gtcgaccttc gttatccgcg atgcgtntcc tggcagctac attcctgctc ctggcgctca 60
gcaccgctgc ccaggccgaa ccggtgcagt tcaaggactg cggttctgtg gatggagtta 120
taaaggaagt gaatgtgagc ccatgcccca cccaaccctg ccagctgagc aaaggacagt 180
cttacagcgt caatgtcacc ttcaccagca atattcagtc taaaagcagc aaggccgtgg 240
tgcatggcat cctgatgggc gtcccanttc cctttcccat tcctga 286

<210> 105
<211> 406
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(406)
<223> n = A,T,C or G

<400> 105
gtcgacgcgt agcagagtgg tcgttgtctt tctaggtctc agccggtcgt cgcgacgttc 60
gcccgctcgc tctgaggctc ctgaagccga aaccagctag actttcctcc ttcccgcctg 120
cctgtagcgg cgttgttgcc actccgccac catgttcgag gcgcgcctgg tccagggctc 180
catcctcaag aaggtgttgg aggcactcaa ggacctcatc aacgaggcct gctgggatat 240
tagctccagc ggtgtaaacc tgcagagcat ggactcgtcc cacgtctctt tggtgcagct 300
caccctgcgg tctgagggct tcgacaccta ccgctgcgac cgcaacctgg ccatgggcgt 360
gaacctcacc agtatgtnca aaatactaaa atgcgccggc aatgaa 406

<210> 106
<211> 258
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(258)
<223> n = A,T,C or G

<400> 106
gtcgacgatt ttttttgtac attttggctg cagtattggt ggtagaatat actataatat 60
ggatcatctc tacttctgta tttatttatt tattactaga cctcaaccac agtcttcttt 120
ttccccttcc acctctcttt gcctgtagga tgtactgtat gtagtcatgc actttgtatt 180
aatatattan aaatctacag atctgttttg nacttttttat actgttggat acttataatc 240
aaaactttta ctagggta 258

<210> 107

<211> 369
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(369)
<223> n = A,T,C or G

<400> 107
gtcgacgtaa aatagaaaca gaaggggact ttatcaacct gattaacttt ctcaacatgt 60
taaccctaca gttaacatta taatcaatgg tgaatcattg agtactttcc ttctaagatc 120
agaaacagtt caaagtccac tctcaccatt tctattcaac attgtactgg aatcccagcc 180
agtgcagtaa taccaataat aaaaaattaa agtcataaag attgaaaagg atgaagtaaa 240
gctatttcaa ttntatttag aagtatttag aaaccccaaa gaatctacaa aaaactaata 300
gaaataagtg aatatatgaa ggtcttacta tacaagatca acatatcaaa agcagtggta 360
tttaagaaa 369

<210> 108
<211> 289
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(289)
<223> n = A,T,C or G

<400> 108
gtcgacattg catccttgaa atcctgggct caggtgatcc tcccgcctga gcctcctgag 60
tatctgggac tacagatgcg tgccaccaag cctggctaat tttgtctcat gtcttctaaa 120
aattattttg tgaagcccct tcacaaaaaa ccttaaggga aatctgatgg tgctcaggaa 180
tctaactctc cctaaaccat cctctttaac tgcttctaaa atatctctgt tggcctttct 240
tanccttttt ctgtttccat tcagtgctcc aagcgctttt tgtttctaa 289

<210> 109
<211> 444
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(444)
<223> n = A,T,C or G

<400> 109
gtcgacctgg cgttggcacc gctgaggaat gggcctgggc ggggagggac atctctacac 60
cgttcccatc cgggaacagg gcaacatcta caagcccaac aacaaggcca tggcagacga 120
gctgagcgag aagcaagtgt acgacgcgca caccaaggag atcgacctgg tcaaccgcga 180
ccctaaacac ctcaacgatg acgtggtcaa gattgacttt gaagatgtga ttgcagaacc 240
agaagggaca cacagttttg acggcatttg gaaggccagc ttcaccacct tcactgtgac 300
naaatactgg ttttaccgct tgctgtctgc cctctttggc atcccgatgg cactcatctg 360
gggcatttaa cttcgccatt ctctctttcc tgcacatntg ggcagttgta accatgcatt 420
aagagcttcc tgattgagat tcag 444

<210> 110
<211> 196
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(196)
<223> n = A,T,C or G

<400> 110
ccttttttt ttttttcatt aaataancca tcatcacatt agtacaatac aattttatat 60
tttttaaata tactatatat gttaaggata aggggtgaag ttttcttcct ttgtaatacc 120
tgttcaagag tttaatggat taggagatta gngttaacct tgaggataaa agtncaaatt 180
tgtctcatta ggacac 196

<210> 111
<211> 544
<212> DNA
<213> Homo sapien

<400> 111
gtcgacctca gccggtcgtc gcgacgttcg cccgctcgct ctgaggctcc tgaagccgaa 60
accagctaga ctttcctcct tcccgcctgc ctgtagcggc gttgttgcca ctccgccacc 120
atgttcgagg cgcgcctggt ccagggctcc atcctcaaga aggtgttgga ggcactcaag 180
gacctcatca acgaggcctg ctgggatatt agctccagcg gtgtaaacct gcagagcatg 240
gactcgtccc acgtctcttt ggtgcagctc accctgcggt ctgagggctt cgacacctac 300
cgctgcgacc gcaacctggc catgggcgtg aacctcacca gtatgtccaa aatactaaaa 360
tgcgccggca atgaagatat cattacacta agggccgaag ataacgcgga taccttggcg 420
ctagtatttg aagcaccaaa ccaggagaaa gtttcagact atgaaatgaa gttgatggat 480
ttagatgttg aacaacttgg aattccagaa caggagtact gctgtgtagt aaagatgcct 540
tctg 544

<210> 112
<211> 378
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(378)
<223> n = A,T,C or G

<400> 112
gtcgacacgg cttccgcacg gtcatccgcc ccttctacct gaccaactcc tcaggtgtgg 60
actagacggc gtggcccaag ggtggtgaga accggagaac cccaggacgc cctcactgca 120
ggctcccctc ctcggcttcc ttcctctctg caatgacctt caacaaccgg ccaccagatg 180
tcgccctact cacctgagcg ctcagcttca agaaattact ggaaggcttc cactagggtc 240
caccaggagt tctcccacca cctcaccagt ttccaggtgg taagcaccag gacgccctcg 300
aggttgctct gggatccccc cacagcccct ggncagtctg cccttgncac tggtctgaag 360
gtcattaaaa ttacattg 378

<210> 113
<211> 530
<212> DNA
<213> Homo sapien

<400> 113
gtcgacgtcg ttgtctttct aggtctcagc cggtcgtcgc gacgttcgcc cgctcgctct 60
gaggctcctg aagccgaaac cagctagact ttcctccttc ccgcctgcct gtagcggcgt 120
tgttgccact ccgccaccat gttcgaggcg cgcctggtcc agggctccat cctcaagaag 180

gtgttggagg cactcaagga cctcatcaac gaggcctgct gggatattag ctccagcggt 240
gtaaacctgc agagcatgga ctcgtcccac gtctctttgg tgcagctcac cctgcggtct 300
gagggcttcg acacctaccg ctgcgaccgc aacctggcca tgggcgtgaa cctcaccagt 360
atgtccaaaa tactaaaatg cgccggcaat gaagatatca ttacactaag ggccgaagat 420
aacgcggata ccttggcgct agtatttgaa gcaccaaacc aggagaaagt ttcagactat 480
gaaatgaagt tgatggattt agatgttgaa caacttggaa ttccagaaca 530

<210> 114
<211> 178
<212> DNA
<213> Homo sapien

<400> 114
gtcgacattt cttcctaata ttctataatc tccaactcct gaaaacccct ctctcaacta 60
atactttgct gttgaaatgt tgtgaaatgt taagtgtctg gaaatttttt ttttctaaga 120
aaaactatta aagtacttcc tagtagggca aaaaaaaaaa aaaaaaaaaa aaaaaaaa 178

<210> 115
<211> 211
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(211)
<223> n = A,T,C or G

<400> 115
ccttttttt ttttttttng gntcaatctt ttatttggaa caaaggaaaa aaggactgac 60
accagtttag cctttgagtg tgcaaagctc tgccctccct cccacccctn agccccaaat 120
ccaanatttc atagccctaa cacccaccca agcagnttcc ctcacacatg ccctttgntt 180
tcttcctctc ttctatggtt ccttaggnaa a 211

<210> 116
<211> 439
<212> DNA
<213> Homo sapien

<400> 116
gtcgacctgt cactcactac atgaataagc aaatattgtc ttcaaaagaa tgcacaagaa 60
ccacaattaa gatgtcatat tattttgaaa gtacaaaata tactaaaaga gtgtgtgtgt 120
attcacgcag ttactcgctt ccatttttat gacctttcaa ctataggtaa taactcttag 180
agaaattaat ttaatattag aatttctatt atgaatcatg tgaaagcatg acattcgttc 240
acaatagcac tattttaaat aaattataag ctttaaggta cgaagtattt aatagatcta 300
atcaaatatg ttgattcatg gctataataa agcaggagca attataaaat cttcaatcaa 360
ttgaactttt acaaaaacca cttgagaatt tcatgagcac tttaaaatct gaactttcaa 420
agcttgctat taaatcatt 439

<210> 117
<211> 357
<212> DNA
<213> Homo sapien

<400> 117
gtcgactcca aattgacttt gcagcagggt ggcagggtca ggagagtctg gtcctgccta 60
gctcagattt catggcacct gcacttgaag caagtcactt ctttatcaca ggtgtcttga 120
aacattagct tcttttacca acctgagaaa attaggatga cctggcaaat aagatcttga 180
ataggccaaa agcaagtatc ttgctgtgtg tagtctcttg gttaaagtga agaaacagta 240

ctgttcacac ctttcttcac tgagattcca gtgtacatga gaacatatat ttattgcatg 300
attttctaga tacacagtct atgcattatt catatacatt tattttagcc taaagtg 357

<210> 118
<211> 431
<212> DNA
<213> Homo sapien

<400> 118
cctccctgag gaaattagga acctgttggc agatgttgaa acatttgtag cagatatact 60
gaaaggagaa aatttatcca agaaagcaaa ggaaaagaga gaatccctta ttaagaagat 120
aaaagatgta aagtctatct atcttcagga atttcaagac aaaggtgatg cagaagatgg 180
ggaagaatat gatgaccctt ttgctgggcc tccagacact atttcattag cctcagaacg 240
atatgataaa gacgatgaag ccccctctga tggagcccag tttcctccaa ttgcagcaca 300
agaccttcct tttgttctaa aggctggcta ccttgaaaaa cgcagaaaag atcacagctt 360
tctgggattt gaatggcaga aaacggtggt gtgctctcag taaaacggta ttctattatt 420
atggaagtga t 431

<210> 119
<211> 131
<212> DNA
<213> Homo sapien

<400> 119
cccctcgccc gtcacgcacc gcacgttcgt ggggaacctg gcgctaaacc attcgtagac 60
gacctgcttc tgggtcgggg tttcgtacgt agcagagcag ctccctcgct gcgatctatt 120
gaaaggtcga c 131

<210> 120
<211> 409
<212> DNA
<213> Homo sapien

<400> 120
gtcgacgtaa aagccacaca gaaatcaaaa gataagaata tagtttcagc taccaaaaag 60
cagcctcaga ataaaagtgc atttcagaag acaggaccca gctccttgaa gtctcctggc 120
cgtaccccac tgtccatcgt gagcctaccc cagtcttcta ccaaaacaca aactgcaccg 180
aagtcagcac agactgtcgc taagagccag cattcaacta aagggcctcc cagaagtggc 240
aaaaccccag cttcaatcag gaaaccaccc tcatctgtta aggatgcaga tagtggagat 300
aaaaaaccta ctgcaaagaa aaaggaagat gatgaccatt attttgtcat gactggaagt 360
aagaaaccta gaaaataaat acatactcat tataaaaaaa aaaaaaaag 409

<210> 121
<211> 131
<212> DNA
<213> Homo sapien

<400> 121
cccctcgccc gtcacgcacc gcacgttcgt ggggaacctg gcgctaaacc attcgtagac 60
gacctgcttc tgggtcgggg tttcgtacgt agcagagcag ctccctcgct gcgatctatt 120
gaaaggtcga c 131

<210> 122
<211> 130
<212> DNA
<213> Homo sapien

<400> 122

gtcgaccttt caatagatcg cagcgaggga gctgctctgc tacgtacgaa accccgaccc 60
agaagcaggt cgtctacgaa tggtttagcg ccaggttccc cacgaacgtg cggtgcgtga 120
cgggcgaggg 130

<210> 123
<211> 424
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(424)
<223> n = A,T,C or G

<400> 123
gtcgacgaga tgtggagtgg ctaaaagaag cctgtgttcc tgagaactta gaggaccagg 60
acctctattc caggcttgga cacctacatt tagactatta tatgaggaag caatcaactt 120
ctcacttgtt tcaaccactt tcacttgcag tcaaacctga attgtaagtg aaattgcttt 180
cctgatagca aacctgttgg attttctcca gaatccctgg gccactttta gcagtcagat 240
tcgtctaatc ctcctttaaa gatggtggca gtgaaactgg tacatgggac ctgactgggc 300
tttgtttgca actttctgat aatttataat tatttcaaaa taaaaaaatt ttaaaaataa 360
aaaaaaaaaa aaagggcggc cgctcggagt ctagagggcc cgtttaaacc cgntgatcag 420
cctc 424

<210> 124
<211> 548
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(548)
<223> n = A,T,C or G

<400> 124
ccttttttt ttttttctc tagtaatgac tttattcatg aatctataat ggaattcaaa 60
atagcaaaga acatgaaaat gttcanatta atatttatta accaaatgca tcanaaaata 120
catctatttt cacatatcaa aagtgcctaa aatgcatgtg anaatataaa tattctccac 180
tttgnggaac ttcaagataa tgaaaaattg cttaatacac tttgccacaa aaactcatta 240
cactgcaaat ncagaanaaa taaaataact cattacattg cagatncaaa agaaatcaaa 300
tgtaactggc aaaataacca tttcatggct aatctttngg naaagngcta ttttcacact 360
gaaaaaaaga anttagaaaa gattaaaaat tttaaattct gaaccatcat tctnaaagtc 420
tgaagcgttt tctttagtat tcactatgtt catcacattc atgtgtnccc aacatgagac 480
taaacactat ctcaaaatct taaaaaatct ttccatncac anattatttc ctggaagnta 540
aaaattat 548

<210> 125
<211> 562
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(562)
<223> n = A,T,C or G

<400> 125
gtcgacgctc ctaacaaaga agatatcttg aaaatttcag aggatgagcg catggagctc 60

agtaagagct ttcgagtata ctgtattatc cttgtaaaac ccaaagatgt gagtctttgg 120
gctgcagtaa aggagacttg gaccaaacac tgtgacaaag cagagttctt cagttctgaa 180
aatgttaaag tgtttgagtc aattaatatg gacacaaatg acatgtggtt aatgatgaga 240
aaagcttaca aatacgcctt tgataagtat agagaccaat acaactggtt cttccttgca 300
cgccccacta cgtttgctat cattgaaaac ctaaagtatt ttttgttaaa aaaggatcca 360
tcacagcctt tctatctagg ccacactata aaatctggag accttgaata tgtgggtatg 420
gaaggaggaa ttgtcttaag tgtagaatca atgaaaagac ttaacagcct tctcaatatc 480
ccagaaaagt gtcctgaaca gggagggatg atttggaaga tatctgaaga taaacagcta 540
gcagnttgcc tgaaatatgc tg 562

<210> 126
<211> 131
<212> DNA
<213> Homo sapien

<400> 126
cccctcgccc gtcacgcacc gcacgttcgt ggggaacctg gcgctaaacc attcgtagac 60
gacctgcttc tgggtcgggg tttcgtacgt agcagagcag ctccctcgct gcgatctatt 120
gaaaggtcga c 131

<210> 127
<211> 512
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(512)
<223> n = A,T,C or G

<400> 127
gtcgacgtcc ggcttcggag cgggagtgtt cgttgtgcca gcgactaaaa agagaattaa 60
atatgggtga tgttgagaaa ggcaagaaga tttttattat gaagtgttcc cagtgccaca 120
ccgttgaaaa gggaggcaag cacaagactg ggccaaatct ccatggtctc tttgggcgga 180
agacaggtca ggcccctgga tactcttaca cagccgccaa taagaacaaa ggcatcatct 240
ggggagagga tacactgatg gagtatttgg agaatcccaa gaagtacatc cctggaacaa 300
aaatgatctt tgtcggcatt aagaagaagg aagaaagggc agacttaata gcttatctca 360
aaaaagctac taatgagtaa taattggcca ctgccttatt tattacaaaa cagaaatgtc 420
tcatgacttt tttatgtgta ccatccttta atagatctca tacaccagan tttcagatca 480
tgaatgactg acagaatatt ttgttgggca gt 512

<210> 128
<211> 483
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(483)
<223> n = A,T,C or G

<400> 128
gtcgacgttt ttgtgatact gacacatccc ccctttcaga acaccctctg cccttggatt 60
ctgtgcacag gaagctagtt gctcccctga atacactctt tcttccttgt aatacagcct 120
ctgattttga gcccaagaat aaagactaca gttctcagac tccttcgcaa ataaattttg 180
tgactaaact ctagtcaaca gtaagtgtca tgtagcagct cctgggaatc tcctttaaaa 240
agagagcttg tttataccta ttgtcatctc tgttcttctg tgccccttct tccattttgc 300
tgcctggaaa gcagatgtga tggctggaat tccagtcacc attttggacc atgaggacaa 360

caccctanag atgtggagtg gctaaaagaa gcctgtgttc ctgagaactt anaggaccan 420
gacctctatt ccaggcttgn acacctanat ttanactatt atatgaggaa gcaatcaact 480
tct 483

<210> 129
<211> 326
<212> DNA
<213> Homo sapien

<400> 129
gtcgaccttt tatctgtcta tccatccatc atcatttgaa ggcctaatat atgccaagta 60
ctcacatggt atgcattgag acataaaaaa gactgtctat aacctcaata agtattaaaa 120
atcccattat tacccataag gttcatctta tttcattttt agggaataaa attacatgtc 180
tatgaaattt caattttaag cactattgtt tttcatgacc ataatttatt tttaaaaata 240
aattaaaggt taattatatg catgtatgta tttctaataa ttaaaaatgt gttcaatccc 300
tgaaaaaaaa aaaaaaaaaa aaaaaa 326

<210> 130
<211> 276
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(276)
<223> n = A,T,C or G

<400> 130
gtcgacggac accagctgcg gaanttgcgg ctttggcaga ttgaaatcat ggcaggtcca 60
gaaagtgatg cgcaatacca gttcactggt attaaaaaat atttcaactc ttatactctc 120
acaggtagaa tgaactgtgt actggccaca tatggaagca ttgcattgat tgtcttatat 180
ttcaagttaa ggtccaaaaa aactccagct gtgaaagcaa cataaatgga ttttaaactg 240
tctacggttc ttaacctcat ctgttaagtt cccatg 276

<210> 131
<211> 482
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(482)
<223> n = A,T,C or G

<400> 131
ccttttttttt ttttttttaa attttaaggt tatttttatt tacaactttt gaaaaatgta 60
catttttttt tacatgggtt acttgtgcaa agttagattt ggaagtgata aatgcataaa 120
aggngacaat agaacattan acaaaacatt tacaagcctt gtcccatact gctacttaaa 180
ggtactatat atctaaaagt ataaatatcc aaaaaaagat cgcanacatt ggctttaagg 240
ttctcanatg ctgaaaggga anaaattaaa gcatgcagca ataactcagg atttgagtgg 300
aaaatagttn gccacanata tgctatgctc ccttccttga attcattaaa actctaaaat 360
aaagatggac aattgagttt attcacttag ggcagcactg atcctttaaa aagattaaag 420
gagctccaac tttcccctagc tnaaaaactc acnatngttt ccattcctct gctcccacac 480
ct 482

<210> 132
<211> 428
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(428)
<223> n = A,T,C or G

<400> 132
cctttttttt ttttttgtc taaaaggcaa aaaactacaa acagcccaag tcctgagctc 60
cccaagacct ggatcctcca ctgtcccccc gaaacccggc aggaggcggg atggggagca 120
caanaggtgg gttcttaaaa aagtcacccc tggatgggaa agctcttcat cttctgccgc 180
cttcctntgc ctcccgctgc tgccgaggag agagatggan aggaccgggg ctatgccggc 240
aaactcaact tcttcccctt taggactttg gngatataga ggtanaanaa atcgcagtan 300
aggactgtct ggaccaggcc tgccacaatg gcnatgaggt cgaagaancc ctcgaaangg 360
taagcgccan anccagttga anagatanag cgtggcggta aacgcctagc gcaaacaagt 420
agnggctg 428

<210> 133
<211> 537
<212> DNA
<213> Homo sapien

<400> 133
gtcgacccca aacccactcc accttactac cagacaacct tagccaaacc atttacccaa 60
ataaagtata ggcgatagaa attgaaacct ggcgcaatag atatagtacc gcaagggaaa 120
gatgaaaaat tataaccaag cataatatag caaggactaa cccctatacc ttctgcataa 180
tgaattaact agaaataact ttgcaaggag agccaaagct aagacccccg aaaccagacg 240
agctacctaa gaacagctaa aagagcacac ccgtctatgt agcaaaatag tgggaagatt 300
tataggtaga ggcgacaaac ctaccgagcc tggtgatagc tggttgtcca agatagaatc 360
ttagttcaac tttaaatttg cccacagaac cctctaaatc cccttgtaaa tttaactgtt 420
agtccaaaga ggaacagctc tttggacact aggaaaaaac cttgtagaga gagtaaaaaa 480
tttaacaccc atagtaggcc taaaagcagc caccaattaa gaaagcgttc aagctca 537

<210> 134
<211> 535
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(535)
<223> n = A,T,C or G

<400> 134
gtcgactcct ctcacatggt ggctttagga agatccttgg ccaggagggt gatgccagct 60
atcttgcttc tgaaatatct acctgggatg gagtgatagt aacaccttca gaaaaggctt 120
atgagaagcc accagagaag aaggaaggag aggaagaaga ggagaataca gaagaaccac 180
ctcaaggaga ggaagaagaa agcatggaaa ctcaggagtg acattccctt cactcctttt 240
cctacccaag ggggaagact ggagcctaag ctgcctgcta ctgggcttta catggtgaca 300
gacatttccg tgggataggg aagatagcag gaagaaaagt aaactccata gaagtgtcat 360
tccactgggt tttgatattg gcttagctgc cagtctccca tttgtgacct atgccatcca 420
tctataatgg aggataccaa catttcttcc taatattcta taatctccaa ctcctgaaaa 480
acccctctct caactaatac tttgctgttg aaatgttgng aaatgttaag tgtct 535

<210> 135
<211> 114
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(114)
<223> n = A,T,C or G

<400> 135
gtcgacctca gcgtcattca gaannnggaa aagaatcaat gtaactcaag aaaggatgaa 60
aataccettt cttcccatcc acgtgtttcc atctcaatcc tcacagggtc ctgg 114

<210> 136
<211> 354
<212> DNA
<213> Homo sapien

<400> 136
agaagcgaga tgacgaaggg aacgtcatcg tttggaaagc gtcgcaataa gacgcacacg 60
ttgtgccgcc gctgtggctc taaggcctac caccttcaga agtcgacctg tggcaaatgt 120
ggctaccctg ccaagcgcaa gagaaagtat aactggagtg ccaaggctaa aagacgaaat 180
accaccggaa ctggtcgaat gaggcaccta aaaattgtat accgcagatt caggcatgga 240
ttccgtgaag gaacaacacc taaacccaag agggcagctg ttgcagcatc cagttcatct 300
taagaatgtc aacgattagt catgcaataa atgttctggt tttaaaaaat aaaa 354

<210> 137
<211> 347
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(347)
<223> n = A,T,C or G

<400> 137
gtcgacggcg agattacgag gcgaggctcg cgcgcccgcc cccgccctgg cccccagtgc 60
ccacccggtc ggcccggcac agccatgatc aaggcgatcc taatcttcaa caaccacggg 120
aagccgcggc tctccaagtt ctaccagccc tacagtgaag atacacaaca gcaaatcatc 180
agggagactt tccatttggt atctaagaga gatgaaaatg tttgtaattt cctagaagga 240
ggattattaa ttggaggatc tgacaacaaa ctgatttata gacattatgc aacgttatat 300
tttgtcttct gtgnnggatt cttnanaaag tgaacttggc attttag 347

<210> 138
<211> 434
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(434)
<223> n = A,T,C or G

<400> 138
ccttttttt ttttttggt taaatgactt actgtgtaat tttatttcat attacacaaa 60
tgttaatcaa atgctgagta gacatgcaga tgacaagcag tatatgacaa actctgaana 120
aatagttaca tgtagagttt ctcanatttt tagtgtatct aanaattaac tgaagagttt 180
gttaagaatg caggcttaaa ggccaatcca cagattataa tttcatacaa acaggatgga 240
gcctaanaac ctgtaaatta ttaaacaact gattaaaaat agagaggttt ctatgaagtt 300
aggnntgtcc ttatttctta tttgaactgg acaagtagaa ggataatagg taggaccaag 360

tgagcattat cagaatcaaa gtagaggcaa taacaagcca aggtgtttta ncctanctaa 420
agaagctcgt cgac 434

<210> 139
<211> 553
<212> DNA
<213> Homo sapien

<400> 139
gtcgacctga ctataacagt gcctactatg ttaacattag atgaacaagt gaattagagg 60
atttttaaat gtgtatccat cagtgtatgg acacactccc tctaacttct tcaaaaaaca 120
aaaattcctg gtagagctaa gtggttttta gaagtttggt tttggtaact gatttctacg 180
agataattga acacttttta aaatagttga tcattatgtc aaacagccct caacagtaaa 240
cttaaattag gtagaattat agtaagctgg aagagaaaat gttcccaaag agcattagtc 300
cctttctggc accttattac agatgaataa attgagactc acagaaatta aatgacttag 360
ccccagttat ccaactaact ccttaatgtg aggccatgat taggaatagg cttctagtat 420
tcagtcccat attattttga ctgtgtaata ccacgtgcca ctttgatttt aaagtcaaat 480
ctcggcttga actgtatggg gaaaaaaaaa atctccagct ggctctgctg aatccccaga 540
ggggccctcc act 553

<210> 140
<211> 450
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(450)
<223> n = A,T,C or G

<400> 140
gtcgacgccg gtgagttggg tgccggtgga gtcgtgttgg tcctcagaat ccccgcgtag 60
ccgctgcctc ctcctaccct cgccatgttt cttacccggt ctgagtacga caggggcgtg 120
aatacttttt ctcccgaagg aagattattt caagtggaat atgccattga ggctatcaag 180
cttggttcta cagccattgg gatccagaca tcagagggtg tgtgcctagc tgtggagaag 240
agaattactt ccccactgat ggagcccagc agcattgaga aaattgtaga gattgatgct 300
cacataggtt gtgccatgag tgggctaatt gctgatgcta agactttaat tgataaagcc 360
agagtggaga cacagaacca ctggttcacc tacaatgaga caatgaacag nggagagtgt 420
gacccaagct gngtccaatc tgnctttgca 450

<210> 141
<211> 140
<212> DNA
<213> Homo sapien

<400> 141
acacaccct ccctcacaca gggctcgacc gccgctggca gttccagggc taaggatttc 60
ctgcacttac ttgtggagaa ggagttcata gctgggctcc tggaggggag atagagcttc 120
tctttcgttc ccgggtcgac 140

<210> 142
<211> 591
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(591)

<223> n = A,T,C or G

<400> 142
gtcgacctgg acttgcagtg taaacagaga cgctgcaaat tgcttgtgga cggtgtaggc 60
cgctgcaggc caccatgaac cggcttccgg atgactacga cccctacgcg gttgaagagc 120
ctagcgacga ggagccggct ttgagcagct ctgaggatga agtggatgtg cttttacatg 180
gaactcctga ccaaaaacga aaactcatca gagaatgtct taccggagaa agtgaatcat 240
ctagtgaaga tgaatttgaa aaggagatgg aagctgaatt aaattctacc atgaaaacaa 300
tggaggacaa gttatcctct ctgggaactg gatcttcctc aggaaatgga aaagttgcaa 360
cagctccgac aaggtactac gatgatatat attttgattc tgattccgag gatgaagaca 420
gagcagtaca ggtgaccaag aaaaaaaaga agaaacaaca caagattcca acaaatgacg 480
aattactgta tgatcctgaa aaagataaca gagatcaggc ctgggttgat gcacagngaa 540
aggggttacc atggtttggg ancacaggag atcacgtcaa caacagcctg t 591

<210> 143
<211> 538
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(538)
<223> n = A,T,C or G

<400> 143
gtcgacaaat aagaagacac cttcagcatc ttaaactaga ataaataaaa gaagggtggc 60
ctcctagaat ttaagtcagg agggaggtgg tgggcaatgg atgacaagct ctactttgaa 120
gaggttgaat ttcagctgac cactactaaa gcagtacaag cttttccttt cagcaagtgt 180
cttcccagaa atgtgatagc aatttttagg aagaatttgg caaacataat gtttagcaga 240
tttgcaacaa atgctataag ctcaaatttt ttttttttt tttttnggca gcacactcag 300
ccctccaagg ggaagtggat tatttttctt gcaagtgcat tancanggga ggtattaagg 360
acagcaacat tccttcctgt ataaaaaaat aaataaataa aagaagaaag gattattgag 420
gccctctctg ctgnatgtaa tgtacttcan gatgttggta naaaagatat caacctanaa 480
taagnttcac aanaatacat ttggtttcac ngaaagttta aagtcaatct ggacattc 538

<210> 144
<211> 401
<212> DNA
<213> Homo sapien

<400> 144
gtcgacctgt tccctttttg ggcctgtctc cccatgtata tgttgagggg ttggacttca 60
gggcctgtga gaggccttcc aacttagact ttctccccag gagcataaat tcagtgaatc 120
tacgtgactc tcagtgatgg catcattgcc taatatccac ccagcttctg cttgaaaact 180
tccagagact ggttcacatg ggggtataaa agcccaggcc ccttgcccca acttgggaca 240
actatgaaga gtttccagct ccacagctcc ctgaggggct ggccgaggcc tttgtggggt 300
ttgcctcaca acccaattta tccctctggc caattctgct tcaatcactc cctgccaggt 360
gttgaccttg aatgtactcc cccaataaac ctcctgcaag c 401

<210> 145
<211> 367
<212> DNA
<213> Homo sapien

<400> 145
ccttttttttt ttttttttag ttagaaatta caagtttatt tttatatttt gaaaaaggca 60
taatagaaaa caaaaataaa caaccaggca tatcaatatt tgtgacatac acatacacac 120
aaaaatgaat ataggaaata acacgaagaa aaagcatagt atgttttgaa accaacgtgg 180

ggcatgaaca gatttttgat gaaatacaac taaaggtttt aagtgtctat gtaatgttcg 240
agatattacg atcactctta tcctactagc aaaaattagc aaactaggct ttaaaacatg 300
attcctgttg ttttagcagg atttattttg gtaatgatcc tgcttcctta taaacaacta 360
cgtcgac 367

<210> 146
<211> 395
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(395)
<223> n = A,T,C or G

<400> 146
gtcgacaaga aagccccctt aatgttttta actgatgata ttttttaag cttaccaata 60
taagtatttt taaaggttct atttttcaaa gtcataacaa tgattgttct tgttttctct 120
catagaatag actgccatcg gataaagagt ggtccctagc ttctattttt ccaagtaaat 180
aagtagaaca tgttcttggg attataccat taaatgttaa ttttcttgaa gaagaaagat 240
tgttgtctgc caagatttta tgttagcgct cggattgagg cagaaaacgg aagcaccagg 300
tttaacactg ggatgacttg ggttgtgttc ctggaggttt gaagngggcc ttccccgcct 360
tttgaggggg aaaactgact gntttgaaca catat 395

<210> 147
<211> 455
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(455)
<223> n = A,T,C or G

<400> 147
gtcgactaaa aactggaacg gtgaaggtga cagcagtcgg ttggagcgag catcccccaa 60
agttcacaat gtggccgagg actttgattg cacattgttg ttttttaat agtcattcca 120
aatatgagat gcgttgttac aggaagtccc ttgccatcct aaaagccacc ccacttctct 180
ctaaggagaa tggcccagtc ctctcccaag tccacacagg ggaggtgata gcattgcttt 240
cgtgtaaatt atgtaatgca aaatttttt aatcttcgcc ttaatacttt tttattttgt 300
tttattttga atgatgagcc ttcgtgcccc cccttccccc ttttttgtcc cccaacttga 360
gatgtatgaa ggcttttggt ctccctggga gtgggtggan gcagccaggg cttacctgta 420
cactggactt gagaccagtt gaaataaaag tgcac 455

<210> 148
<211> 518
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(518)
<223> n = A,T,C or G

<400> 148
gtcgacctca cgccttcgcc gtagcatctt tcgcagcgga ccgaagagaa gaaaagtagg 60
ccagagccga actctcttcc tgccaagatg tctattggtg tgccgattaa agtactgcat 120
gaggccgagg gccacattgt gacatgtgag acgaacaccg gtgaggtata tcgggggaag 180

ctcattgaag cagaggacaa catgaactgc cagatgtcca acatcacagt cacatacaga 240
gatggccgag tggcacagct ggagcaggta tacatccgtg gcagcaaaat ccgctttctg 300
attttgcctg acatgctgaa gaacgcaccc atgttaaaga gcatgaaaaa taaaaaccaa 360
ggctcagggg ctggccgagg aaaagctgct attctcaagg cccaagtggc cgcaagagga 420
agaggacgtg gaatgggacg tggaaacatc tttcaaaagc gaagggataa ttttctaagt 480
tgaacagaac tttgtccttt tttctttcan gttatctg 518

<210> 149
<211> 442
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(442)
<223> n = A,T,C or G

<400> 149
ccttttttt ttttttttct tttcataaaa tttttacttt atgaattaaa tacattgaga 60
aacagngaaa atatatttac agtcatttga agngggcact actaacatat ttaatttaaa 120
aaaatctttg ctgtttcttt gcctgtttct ttcaaagaga attttaaata tgactttagc 180
ttttaaaaaa tacaatangg aaataattac attcttaata tgaaaacatt ttacaacgta 240
tcaccatggt caattaattc tgaatatcac ttaaaagttg atgttaaaat gtaaagngaa 300
tatttccttt cttgttanaa aatcaaaaag attatctcat taaaaacacc ttnggnccta 360
agacttatga tctgaanatg nccttttgaa aagnatcttc catggctaca actaaaaaan 420
acccggtaac acttgtgcac gg 442

<210> 150
<211> 341
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(341)
<223> n = A,T,C or G

<400> 150
gtnnacctat tattacccca tgatacagtt tagaaaacaa attcatgcac taagtaaatg 60
gaccaaatcg taagtcactg ccttttgctc cagagttggc tgctttgatt actcctacac 120
ttaactagtc aactttaaag aaaaaaattt ttttttctgt gaaggaaatt aagtgcctat 180
tttcanagag ctaaaagcaa tcaaggcatc tactgtgtta ttttcctatc catgtngact 240
catgtttaag gttgactagg aagacataat cattggctgc taataacaaa tngatttctt 300
ttnataaaaa atttaaaaga gtntntaatg ctttatttta t 341

<210> 151
<211> 459
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(459)
<223> n = A,T,C or G

<400> 151
gtcgaccagg tcttgaccct ggtcaacaag agaataggcc tttaccgtca ctttgacgag 60
accgtcaata ggtacaagca atcccgggac atctccaccc tcaacagtgg caagaagagc 120

ctggagactg aacacaaggc cttgaccagt gagattgcac tgctgcagtc caggctgaag 180
acagagggct ctgatctgtg cgacagagtg agcgaaatgc agaagctgga tgcacaggtc 240
aaggagctgg tgctgaagtc ggcggtggag gctgagcgcc tggtggctgg caagctcaag 300
aaagacacgt acattgagaa tgagaagctc atctcaggaa agcgccagga gctggtcacc 360
aagatcgacc acatcctgga tgccctgtag cccctgcccg catcctncag ggggcccagg 420
gtgcctgcac tttgctgtgg gnangcagat tgggtggta 459

<210> 152
<211> 242
<212> DNA
<213> Homo sapien

<400> 152
gtcgacccaa ggtcacagga gcattgcgtc gctgatgggg ttgaagtttg gtttggttct 60
tgtttcagcc caatatgtag agaacatttg aaacagtctg cacctttgat acggtattgc 120
atttccaaag ccaccaatcc attttgtgga ttttatgtgt ctgtggctta ataatcatag 180
taacaacaat aatacctttt tctccatttt gcttgcagga aacatacctt aagtttttt 240
tg 242

<210> 153
<211> 57
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(57)
<223> n = A,T,C or G

<400> 153
ccttttttt ttttttttt ttccacatca ctcaggtttt atngaattta taaaatt 57

<210> 154
<211> 437
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(437)
<223> n = A,T,C or G

<400> 154
ccttttttt ttttttggt aatncagttt taatttattt tcatcacttt ttcttcataa 60
tccagatatt ttaaaatgca aagaaaatta actttcaatg atatgttcag ggactggcac 120
taaaaaaaat tttcagactg caaatgagtt atacaaatga aaatatcaaa tggagatcca 180
gttatcaaaa tgaaagcact caacatatta aaagttcaca agtatttgta ttgagcacat 240
tacaaaagtc agcttgctaa ctgttgtgat tttaaagaac tattgcanaa gtctgaanaa 300
aatanattta ttagttaact tataaagaga ttaaagaggc tgaaacaagt nttaaaaana 360
aatttgngcc tttattanaa tgttaggcgt cnacgcggcc gctcnngtct anagggcccg 420
tttaaacccg ctgatca 437

<210> 155
<211> 518
<212> DNA
<213> Homo sapien

<400> 155

gtcgacgtga gccacagtca cgccactgca ttctatcctg ggcaacagat ggagaccttg 60
tctcaaaaaa aaaaaattcc tgacatcgct atgtattccc aactttatca tttgtctgcc 120
tgtttagttt tgacttatgt ttttttttt tccccctgt ggacatgtag ttgacggaaa 180
tcgtgaagga actttaatat tttatttaaa tttcccaaaa ctaatcatgc cttatgtgac 240
taatcttcag tgataatatt tcatctactg atatattttc ttgaggtgtg taattttcag 300
tataccttaa tcatttggta taaaaaagag agaggttttt gatatatgaa tgctgttctt 360
gtaaaaatca atcttgacac tttattttaa acttttttatt ggtaatgaca gtgggttttg 420
tacatcatga ttttcaattt aggatatctg tctaatttgt tttttcagag taactatatt 480
ggaattcaat aaaaatattc aaaatttttc ttaaaaaa 518

<210> 156
<211> 600
<212> DNA
<213> Homo sapien

<400> 156
gtcgacgttt atttaagttc atgtttcact gtttgcactt tgcattgaac aatgggttta 60
ttcgctgatg taaacggttc gagtgaagaa ttaatgcagt aagtatgaca acacatacac 120
acttgcctct ccccatctcc agaagagggg agcagagtcc gagcttatct aaatatgaat 180
gtggccacaa agctgtggaa ggtgacaaag cttaaacacc tttgccctgg ctctgcattg 240
tcacctagag agcaagaggt ctatagaaac atcatgtcac atgaaacgat tctctgcttt 300
ttggttctga acttgaagtc cctaaactgc aaaatctaag agttgggtgg ttattaaaat 360
gcttttaaaa agttaactgt ggcaccaatt ctaatgtaat ccaacttgtg actgtttttt 420
tttgttttgt tttgtttttg tgtgtgtgtg tgtgtggcac tgggaaaagt ggaaacaaac 480
atgtattgaa atacatattg gaaataaaaa tggtttgagc gtcagtgata ttctcccaga 540
atgtacttat cttacctcgc atgtactgta gtcactcagt atttgtatat gttgctagaa 600

<210> 157
<211> 542
<212> DNA
<213> Homo sapien

<400> 157
gtcgacggct gggaagtcag ttcgttctct cctctcctct cttcttgttt gaacatggtg 60
cggactaaag cagacagtgt tccaggcact tacagaaaag tggtggctgc tcgagccccc 120
agaaaggtgc ttggttcttc cacctctgcc actaattcga catcagtttc atcgaggaaa 180
gctgaaaata aatatgcagg agggaacccc gtttgcgtgc gcccaactcc caagtggcaa 240
aaaggaattg gagaattctt taggttgtcc cctaaagatt ctgaaaaaga gaatcagatt 300
cctgaagagg caggaagcag tggcttagga aaagcaaaga gaaaagcatg tcctttgcaa 360
cctgatcaca caaatgatga aaaagaatag aactttctca ttcatctttg aataacgtct 420
ccttgtttac cctggtattc tagaatgtaa atttacataa atgtgtttgt tccaattagc 480
tttgttgaac aggcatttaa ttaaaaaatt taggtttaaa tttagatgtt caaaagtagt 540
tg 542

<210> 158
<211> 526
<212> DNA
<213> Homo sapien

<400> 158
cacctcaggc tgtggctctt tgggcttctt cctaatgcag aagaagttgc ccagcagcaa 60
aatcagggag gaggtgagca cctcggcccc cgccaggatg aacacgtaca tgtagacgtg 120
ggtcgcatcc aggagtttgc ctcccgaagg gggcccgacg agcacggcca ccgcctccat 180
cagcagcacc aggccaatgg cactggagaa cttgtaggag atgccaaaga agatgcagaa 240
gaccacgagg ccgccgtagt cgcccgccgt agagcccgcc aggtccgcga ggccgttgaa 300
gaacatggag aagctgaaga ggtagacgga gtagggccgc accttcccaa gccccgccac 360
gaagcccgcg gccggccgcg cgaagatgtc aatgaagccc aggatggtga gcaggaaggc 420
ggccttggtg tcgggcacgc ccaggtcctt ggcgtagctc accacgaaca cgggcgggac 480

gaagagcccc agcaccatga ccgaggcggc cacggcgtaa agcaca 526

<210> 159
<211> 306
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(306)
<223> n = A,T,C or G

<400> 159
ccttttttttt ttttttttttt ttttttngga tgtatnngaa attttttcta tatanatcat 60
gtgtgacttc cataaagaaa aataaacacc tatncacagt ttacctaata tgtgtaatgt 120
taatgaaaag aatcaaagaa agatgttcgt tcattaactc tctaaatnaa attgtttttc 180
cattttacc aacttgatac cttaatcaag ncactcttgt tcttccttaa gtgcaaatga 240
atttttgtt tgggttgggg gacaacacaa aatacaaacc tgggttggat tcactgaaag 300
gcccaa 306

<210> 160
<211> 528
<212> DNA
<213> Homo sapien

<400> 160
ctgaagagcg gcttgctctt cacatcctca ggactcaggg gctggtccct gagcacgtgg 60
aaacaaggac tttgcacagc accttccagc ccaacatttc ccagggaaaa cttcagatgt 120
gggtggatgt tttccccaag agtttggggc caccaggccc tcctttcaac atcacacccc 180
ggaaagccaa gaaatactac ctgcgtgtga tcatctggaa caccaaggac gttatcttgg 240
acgagaaaag catcacagga gaggaaatga gtgacatcta cgtcaaaggc tggattcctg 300
gcaatgaaga aaacaaacag aaaacagatg tccattacag atctttggat ggtgaaggga 360
attttaactg gcgatttgtt ttcccgtttg actaccttcc agccgaacaa ctctgtatcg 420
ttgcgaaaaa agagcatttc tggagtattg accaaacgga atttcgaatc ccacccaggc 480
tgatcattca gatatgggac aatgacaagt tttctctgga tgactact 528

<210> 161
<211> 527
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(527)
<223> n = A,T,C or G

<400> 161
ccttttttttt ttttttttgg tcttacaact ctattgtaaa ctatactaga ctatagaggg 60
acttctacat ctttcaagat gtgtttaata aaggtctgtt tataataact tttgaggcat 120
gaatctagca aatagtactt tatacaatgt cccttgtcat taccaactca taaatattaa 180
gtgtttttca gtgacttatg tttggatgtg gtagtgctga tcagggccat gtgctgatgt 240
cctggagagc aaaatcaatc caaagnggng ctgctatttg tgacagaaca tgtttattta 300
ctcagccccg gagacaaaag gaaaattgat atgggggagc gggaaatagg agaactatta 360
aatgtagtga agaaatttca caggtctaaa ggaactatta aaaggaagga taaagtagat 420
tctatactat aaaacagaat cctacctctg ataaaagaca aatcagcctg aatttttgaa 480
taatcaatag gattcaaaat gactattttc aattgcaatc tcattct 527

<210> 162

<211> 77
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(77)
<223> n = A,T,C or G

<400> 162
ccttttttttt ttttttttttt ttnnttttttt ttttttttttt ttttagggaa anaaatctgg 60
gttcctttta tttttga 77

<210> 163
<211> 645
<212> DNA
<213> Homo sapien

<400> 163
gtcgacaaac aatgaatagt ttttcattgt accatgaaat atccagaaca tacttatatg 60
taaagtatta tttatttgaa tctacaaaaa acaacaaata atttttaaat ataaggattt 120
tcctagatat tgcacgggag aatatacaaa tagcaaaatt gaggccaagg gccaagagaa 180
tatccgaact ttaatttcag gaattgaatg ggtttgctag aatgtgatat ttgaagcatc 240
acataaaaat gatgggacaa taaattttgc cataaagtca aatttagctg gaaatcctgg 300
attttttttct gttaaatctg gcaaccctag tctgctagcc aggatccaca agtccttgtt 360
ccactgtgcc ttggtttctc ctttatttct aagtggaaaa agtattagcc accatcttac 420
ctcacagtga tgttgtgagg acatgtggaa gcactttaag ttttttcatc ataacataaa 480
ttattttcaa gtgtaactta ttaacctatt tattatttat gtatttattt aagcatcaaa 540
tatttgtgca agaatttgga aaaatagaag atgaatcatt gattgaatag ttataaagat 600
gttatagtaa atttatttta ttttagatat taaatgatgt tttat 645

<210> 164
<211> 434
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(434)
<223> n = A,T,C or G

<400> 164
gtcgaccgga cgcggcggca ttaaacggtt gcaggcgtag cagagtggtc gttgtctttc 60
taggtctcag ccggtcgtcg cgacgttcgc ccgctcgctc tgaggctcct gaagccgaaa 120
ccagctagac tttcctcctt cccgcctgcc tgtagcggcg ttgttgccac tccgccacca 180
tgttcgaggc gcgcctggtc cagggctcca tcctcaagaa ggtgttggag gcactcaagg 240
acctcatcaa cgaggcctgc tgggatatta gctccagcgg tgtaaacctg cagagcatgg 300
actcgtccca cgtctctttg gtgcagctca ccctgcggtc tgagggcttn gacacctacc 360
gctgcgaccg caacctggcc atgggcgtga acctcaccag tatgtncaaa atactaaaat 420
gcgccngcaa tgaa 434

<210> 165
<211> 388
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature

<222> (1)...(388)
<223> n = A,T,C or G

<400> 165
gtcgaccatt catatatata tgcatatata tgtgaagctc catatttctg ttgctttaaa 60
gaagtaaaac cttccattta aataagatga catgcntaan ataacaaagc ttccttgatt 120
tccttttcct gtgtaattna atagatttgt tgactagtgc ttgggcacat tataaatcag 180
ngttatttgc tcttggagcc atttttaaa aaaaattttg gcagtgagca gttgaattta 240
tcttgaattt atcatgtgtg tgtatttctg aagcagctac atagcagaac attttaagag 300
attctgttag cccacatgtt catgttggtt gctgctgaat ggtaaatatt aaataaaatt 360
accagattaa tcttaaaaaa aaaaaaaa 388

<210> 166
<211> 443
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(443)
<223> n = A,T,C or G

<400> 166
gtcgaccttg ctttcttaaa aaacaaaaaa actactgtca gtattaatac tgagccagac 60
tggcatctac agatttcaga tctatcattt tattgattct taagcttgta ttaaaaacta 120
ggcaatatca tcatggatac ataggagaag acacatttac aatcattcat tgggcctttt 180
atctgtctat ccatccatca tcatttgaag gcctaatata tgccaagtac tcacatggta 240
tgcattgaga cataaaaaag actgtctata acctcaataa gtattaaaaa tcccattatt 300
acccataagg ntcatcttat ttcattttta gggaataaaa ttacatgtct atgaaatttc 360
aattttaagc actattgntt ttcatgacca taatttattt ttaaaaataa attaaaggtt 420
aattataaaa aaaaaaaaaa aag 443

<210> 167
<211> 608
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(608)
<223> n = A,T,C or G

<400> 167
gtcgactgcg cctctccgaa cgcaacatga aggtgctcct tgccgccgcc ctcatcgcgg 60
ggtccgtctt cttcctgctg ctgccgggac cttctgcggc cgatgagaag aagaaggggc 120
ccaaagtcac cgtcaaggtg tattttgacc tacgaattgg agatgaagat gtaggccggg 180
tgatctttgg tctcttcgga aagactgttc caaaaacagt ggataatttt gtggccttag 240
ctacaggaga gaaaggattt ggctacaaaa acagcaaatt ccatcgtgta atcaaggact 300
tcatgatcca gggcggagac ttcaccaggg gagatggcac aggaggaaag agcatctacg 360
gtgagcgctt ccccgatgag aacttcaaac tgaagcacta cgggcctggc tgggtgagca 420
tggccaacgc aggcaaagac accaacggct cccagttctt catcacgaca gtcaagacag 480
cctggctaga tggcaagcat gtggtgtttg gcaaagttct agagggcatg gangtggtgc 540
ggaangtgga gagcaccaag acagacagcc gggataaacc cntgaangat gtgatcatcg 600
cagactgc 608

<210> 168
<211> 569
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(569)
<223> n = A,T,C or G

<400> 168
gtcgacgcgg ncggccggac agactgacgt gtgagctgca tcgcgggagg cgcatggngg 60
ggatggcgct ggcgcgggcc tggaagcaga tgtcctggtt ctactaccag tacctgctgg 120
tcacggcgct ctacatgctg gagccctggg agcggacggt gttcaattcc atgctggttt 180
ccattgtggg gatggcacta tacacaggat acgtcttcat gccccagcac atcatggcga 240
tattgcacta ctttgaaatc gtacaatgac caagatgcga ccaggatcag aggttncttg 300
gggaagaccc accctacgaa gttggaatga gaccatcaga tgtgataaga aactcttcta 360
gatgtcaaca taaccaacct tataaagact aaaattcatg agtagaacag gaaaatcatc 420
ctgactcatg tgttgtgttc tttatttta attttncaaa gaggctcttg tatagcagtt 480
ttttgtctat tttaacattg taagtcattt tgtnctttga natcantatt ttcttaacct 540
ttgtgactgt ttcaatatta cccccgnga 569

<210> 169
<211> 216
<212> DNA
<213> Homo sapien

<400> 169
gtcgaccggg aacccatcta taaagtaagg cacactcgta atggttgaat tgtgttctgg 60
ttaatttcct aaaggacttc acagttgcac ttatgaaaat gattttatat tgaaatgata 120
tttgcataag aaaaagcatg tgattaattg catattgctt gagtgttcat ctgtgaatgt 180
gaaaaataag ctgtttttt ttattagata tttgca 216

<210> 170
<211> 284
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(284)
<223> n = A,T,C or G

<400> 170
cctttttttt ttttttgaa atggancttc tgaatcgaaa agtttttcac tttaaatgtt 60
ggatgagtgc taccaaaaca ctnngcatct tagggcaagt gtcgctgagc acctgcttcc 120
ccatattctc agcannatca tttcagttct tagcaatctg gcaggcaaaa ggaaagtctg 180
attttgntng aattngcatt ttcctgatta ccancaaact antttaagct taatgggcac 240
ntnntatttc tattctctga actgcccatt tttctaccat tcag 284

<210> 171
<211> 541
<212> DNA
<213> Homo sapien

<400> 171
cagacagcac tgtgttggcg tacaggtctt tgcggatgtc cacgtcacac ttcatgatgg 60
agttgaaggt agtttcgtgg atgccacagg actccatgcc caggaaggaa ggctggaaga 120
gtgcctcagg gcagcggaac cgctcattgc caatggtgat gacctggccg tcaggcagct 180
cgtagctctt ctccagggag gagctggaag cagccgtggc catctcttgc tcgaagtcca 240
gggcgacgta gcacagcttc tccttaatgt cacgcacgat ttcccgctcg gccgtggtgg 300

tgaagctgta gccgcgctcg gtgaggatct tcatgaggta gtcagtcagg tcccggccag 360
ccaggtccag acgcaggatg gcatgggggа gggcataccc ctcgtagatg ggcacagtgt 420
gggtgacccc gtcaccggag tccatcacga tgccagtggt acggccagag gcgtacaggg 480
atagcacagc ctggatagca acgtacatgg ctggggtgtt gaaggtctca aacatgatct 540
g 541

<210> 172
<211> 573
<212> DNA
<213> Homo sapien

<400> 172
gtcgactttc aacaaatcct gaagtctttc tgtgaagtga ccagttctga actttgaaga 60
taaataattg ctgtaaattc cttttgattt tctttttcca ggttcatggt ccttggtaat 120
ttcattcatg gaaaaaaatc ttattataat aacaacaaag atttgtatat ttttgacttt 180
atatttcctg agctctcctg actttgtgaa aaagggtgga tgaaaatgca ttccgaatct 240
gtgagggccc aaaacagaat ttaggggtgg gtgaaagcac ttgtgcttta gctttttcat 300
attaaatata tattatattt aaacattcat ggcatagatg atgatttaca gacaatttaa 360
aagttcaagt ctgtactgtt acagtttgag aattgtagat aacatcatac ataagtcatt 420
tagtaacagc ctttgtgaaa tgaacttgtt tactattgga gataaccaca cttaataaag 480
aagagacagt gaaagtacca tcataattaa cctaaatttt tgttatagca gagtttcttg 540
tttaaaaaaa aataaaatca tctgaaaagc aaa 573

<210> 173
<211> 545
<212> DNA
<213> Homo sapien

<400> 173
gtcgacctgg gctggacgtg gttttgtctg ctgcgcccgc tcttcgcgct ctcgtttcat 60
tttctgcagc gcgccagcag gatggcccac aagcagatct actactcgga caagtacttc 120
gacgaacact acgagtaccg gcatgttatg ttacccagag aactttccaa acaagtacct 180
aaaactcatc tgatgtctga agaggagtgg aggagacttg gtgtccaaca gagtctaggc 240
tgggttcatt acatgattca tgagccagaa ccacatattc ttctctttag acgacctctt 300
ccaaaagatc aacaaaaatg aagtttatct ggggatcgtc aaatcttttt caaatttaat 360
gtatatgtgt atataaggta gtattcagtg aatacttgag aaatgtacaa atctttcatc 420
catacctgtg catgagctgt attcttcaca gcaacagagc tcagttaaat gcaactgcaa 480
gtaggttact gtaagatgtt taagataaaa gttcttccag tcagtttttc tcttaagtgc 540
ctgtt 545

<210> 174
<211> 469
<212> DNA
<213> Homo sapien

<400> 174
gtcgacaaag aatcacagct ttctctccat gttttattaa cacacagaaa aatactttga 60
aaaatatacc atttctcaaa aatgaaatgt atgatttgct acaaatggcc atatggaaaa 120
tatgatacct gcttattttt gactcagggt gcattcaatt tttatactaa ctgaaaatta 180
catgattgcg ttttgttttа aaagtgaaaa aaagtaataa ctgcttttag ccttgtaata 240
ttgaatgcgt caattggctc cccttgtaga atgttgaatg gctatcactg gtgacagatg 300
ttctgtacat cgcagtaata ctgcttatat aattgtgata attttccgct tcttatttgt 360
catttttagt gatttaaaaa tcccttgatg actccctgaa aaatgactga tgtttttcct 420
atattaagta atttctgctg gtaaagtgta agtcttttaa taatttctt 469

<210> 175
<211> 108
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(108)
<223> n = A,T,C or G

<400> 175
ccttttttttt ttttttttng aaattnaagt aacttnatnn aaattcaaaa acaatnctta 60
aaactgnntt tagagtcaag acccttttgt attataaaaa tcacaagt 108

<210> 176
<211> 426
<212> DNA
<213> Homo sapien

<400> 176
gtcgactgtt tagaagttat acacagagag aaggggaaaa gaaactccat caatcaagct 60
aaaggcagca aaggaaaatt tgaaaagaag caacgagact gtttaacaaa gaacatcaaa 120
taagatgatg gaactagaag aaaaacacca atgtccttaa ttatataaaa acatcaatgt 180
ccttaattat ataaattttt aaccctcaat tgggttaaaa aatcagattt gtactaagag 240
atgtatcttt aaaagcaaaa gaaagaataa aaagatcaac aagtaaaaca aagtaggagt 300
cagaattaat attagacaaa ataaaggtga aaaatactaa atgcaagaaa taatatttta 360
gatgacaaaa atgtatgagc cataaaaaag tcatgagttt ttataaacct aaaatatagc 420
gtcgac 426

<210> 177
<211> 538
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(538)
<223> n = A,T,C or G

<400> 177
ccttttttttt ttttttttttt ttttttttgga ngnattngaa attttttcta tatanatcat 60
gtgtgacttc cataaagaaa aataaacacc tatacacagt ttacctaata tgtgtaatgt 120
taatgaaaag aatcaaagaa agatgttcgt tcattaactc tntaaatcaa attgtttttc 180
cattttacc aacttgatac cttaatcaag tcactcttgt tcttccttaa gtgcaaatga 240
atttttttgtt tgggttgggg gacaacacaa aatacaaacc tgggttggat tcactgaaag 300
gcccaanaaa gggccttant ctaggaagta nagngtgana tgatacaccc acaggctggn 360
gcattctggn ccacacaaan acgtgctgnt ccccgcccta ctgntnaaaa cagntctgtt 420
ttgctnanat gctgctgntg caacctgcag gtccatgana agaacaactc cctggttgtt 480
tacancccgn gagtgttttg ngaatttgca cctacatttc ccatgtgata tggactca 538

<210> 178
<211> 566
<212> DNA
<213> Homo sapien

<400> 178
gtcgacttgg aagcaggttt atttattata tacttgcaat tgaatataag atacagacat 60
atatatgtgt tatgtatttc tagaaatgca cataacatat atttgcctat tgtttaatgt 120
tttttccaga tatttattac agaagggcat ggagggatac ctacttattc ttcattatga 180
gaacaattaa aggcatttat tagataggaa attaacagat catctgcttc tataacttta 240
ttagctacat taaataggca gtgagcaata atttaaaaac tcaccattat ataaaataat 300

aaataacaaa gtaaaagtta atgttataaa aataaactga tagtaaggaa aatctaaatg 360
ggcatgatcc cattttagaa gaccaaatga ttaatagggt tgtcatgtta taatagacaa 420
ttgtctaatt atttctgtgt ttttatttag tgggtagcag aagttgttca gaagagcaga 480
aatatgtaga aaacatctct aaatttttgg caatttgaaa tagcaattct gaggcacaca 540
gctcatctac aaaaatcttt tgcaga 566

<210> 179
<211> 277
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(277)
<223> n = A,T,C or G

<400> 179
gncgacggga aaggaatatt atggcannaa gctgagcaag caattctggt ggaaagtcaa 60
acctgtcagt gctccacacc agggctgtgg tcctcccaga catgcatagg aatggccaca 120
ggtttacact gccttcccag caattataag cacaccagat tcagggagac tgaccaccaa 180
gggatagtgt aaaaggacat tttctcagtt gggtccatca gcagtttttc ttcctgcatt 240
tattgnngaa aactatngtt tcatttcttc ttttata 277

<210> 180
<211> 349
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(349)
<223> n = A,T,C or G

<400> 180
ccttttttttt ttttttttttt ttttttttttt ttttttttttt ttagnataag gaaaagctac 60
aaacctcaag gntgttttat ttaaaccaaa taatntgagc aagacatatn tacattaaaa 120
acaaatgaac acattaaaat ttcactattt tacaatctaa attctagcaa catatacaaa 180
tactgagnga ctacagtaca tgccgnggta anaaagtac attntgggan aatatnactg 240
acnctcaaac cattttatt tccaatatgt atttcaatac atgtttgttt ccacttttcc 300
cagngccaca cacacncnca cacaaaaaca aaacaaaaca aaaaaaaac 349

<210> 181
<211> 435
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(435)
<223> n = A,T,C or G

<400> 181
ccttttttttt ttttttttga catttacagg tatttatttg agtaagagct cataaaatat 60
atttttataa tatgcacaag aaaaaataca tttgaatgaa taaaaaataa aatgacagga 120
ggtgacagaa tttagtgttt ataaatgagg tcataaagaa ctttaataat tcanagaana 180
agttcaaagt gtatttaaaa gttgagaccc tgctttacaa tattttataa ttttaaaaaa 240
aggcgtttaa aggtgatagg tgacttaata attttccact ttcaaaatgg gtttctagac 300
actgttatga agctgctatg tactaataat actttgcttg ccaaagtgtt tgggttttgt 360

tgttgtttgt ttgtttgttt gtttttggtt catgaacaac agtgtctaga aacccacttt 420
caaaatgggg tcgac 435

<210> 182
<211> 328
<212> DNA
<213> Homo sapien

<400> 182
gtcgaccatt gtatcttttt cttttctatc cctttacatt tactctttca gaatccttat 60
gttttactgt tttcagaaaa cttagttttt aaaatattct gctaatcatt tttcatataa 120
gtttacatta aataagtctt ttaaagttta ttataattaa ataaagttta ttttcacatg 180
tgttttcata tctactgtct cagaactttc tccttgccct atttttccta ttttatcccc 240
tttttgcatc ttttgagttg acttttttatg attttatttt tctctcttta ctagtttgga 300
tattatctac cccactaata ttctttca 328

<210> 183
<211> 491
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(491)
<223> n = A,T,C or G

<400> 183
ccttttttttt ttttttttttt ttttttttttt ttacaaacct caaggttgtt ttatttaaac 60
caaataatct gagcaagaca tatatacatt aaaaacaaat gaacacatta aaatttcact 120
attttacaat ctaaattcta gcaacatata caaatactga gtgactacag tacatgccga 180
ggtaagataa gtacattctg gganaatatc actgacgctc aaaccatttt tatttccaat 240
atgtatttca atacatgttt gtttccactt ttcccagngc cacacacaca cacacaaaaa 300
caaaacaaaa caaaaaaaaa cagtcacaag ttggattaca ttanaattgg ngccacagtt 360
gactttaaaa gcattttaat aaccacccaa ctcttanatt ttgcagttta gggacttcaa 420
gttcanaacc aaaaagcana gaatcgtttc atgtgacatg atgtttctat agacctcttg 480
ctctctaggt c 491

<210> 184
<211> 478
<212> DNA
<213> Homo sapien

<400> 184
gtcgacggct gctgttggtt gggggccgtc ccgctcctaa ggcaggaaga tggtggccgc 60
aaagaagacg aaaaagtcgc tggagtcgat caactctagg ctccaactcg ttatgaaaag 120
tgggaagtac gtcctggggt acaagcagac tctgaagatg atcagacaag gcaaagcgaa 180
attggtcatt ctcgctaaca actgcccagc tttgaggaaa tctgaaatag agtactatgc 240
tatgttggct aaaactggtg tccatcacta cagtggcaat aatattgaac tgggcacagc 300
atgcggaaaa tactacagag tgtgcacact ggctatcatt gatccaggtg actctgacat 360
cattagaagc atgccagaac agactggtga aaagtaaacc ttttcaccta caaaatttca 420
cctgcaaacc ttaaacctgc aaaattttcc tttaataaaa tttgcttgtt ttaaaaaa 478

<210> 185
<211> 596
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(596)
<223> n = A,T,C or G

<400> 185
gtcgacggac gaggagtgcg gcactgatga gtactgcgct agtcccaccc gcggagggga 60
cgcgggcgtg caaatctgtc tcgcctgcag gaagcgccga aaacgctgca tgcgtcacgc 120
tatgtgctgc cccgggaatt actgcaaaaa tggaatatgt gtgtcttctg atcaaaatca 180
tttccgagga gaaattgagg aaaccatcac tgaaagcttt ggtaatgatc atagcacctt 240
ggatgggtat tccagaagaa ccaccttgtc ttcaaaaatg tatcacacca aaggacaaga 300
aggttctgtt tgtctccggt catcagactg tgcctcagga ttgtgttgtg ctagacactt 360
ctggtccaag atctgtaaac ctgtcctgaa agaaggtcaa gtgtgtacca agcataggag 420
aaaaggctct catggactag aaatattcca gcgttgttac tgtggagaag gtctgtcttg 480
ccggatacag aaagatcacc atcaagccag taattcttct aggcttcaca cttgncagag 540
acactaaacc agctatccaa atgcagtgaa ctccttttat ataatagatg ctatga 596

<210> 186
<211> 314
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(314)
<223> n = A,T,C or G

<400> 186
gtcgactgcc tatttaatgt agctaataaa gttatagaag cagatgatct gttaatttcc 60
tatctaataa atgcctttaa ttgttctcat aatgaagaat aagtaggtat ccctccatgc 120
ccttctgtaa taaatatctg gaaaaaacat taaacaatag gcaaatatat gttatgtgca 180
tttctagaaa tacataacac atatatatgt ctgtatctta tattcaattg caagtatata 240
ataaataaac ctgcttccaa acaacaaaaa aaaaaaaaaa aaaaaaaaan naaaaaaaaa 300
aaaaaaaaaa aaaa 314

<210> 187
<211> 331
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(331)
<223> n = A,T,C or G

<400> 187
ccttttttttt ttttttttatt cctcagngct tttgatttta attcttttgg catatctaaa 60
tgtcagaaag tgaatatata catacagaat tcaaaacacc ttcctaaaat ggttattatt 120
ggccantcat tnacatcttt attttgaaag tctgaattgn caaatagttc taaagtgcat 180
tcttgcagct aataaatagc agcatttgtt tataaaacct taagaaattc agaccagggc 240
tgganaagtc acaataaaaa atcagacatg atctanatat agtcttcctt aatcatctaa 300
gacaaacact tgtgtgaatt agtttataag g 331

<210> 188
<211> 567
<212> DNA
<213> Homo sapien

<400> 188

gtcgacgctg aagaaggaaa agaaatgtgt gaaactcata ggagttcccg ctgacgctga 60
ggccttaagt gaaagaagtg gaaacacccc taactctccc aggttagctg ctgaatcaaa 120
gcttcaaaca gaagttaaag aaggaaaaga aacttcaagc aaattggaaa aagaaacttg 180
taagaaatta caccctattc tatatgtgtc ttctaaatct actccagaga cccagtgccc 240
tcaacagtaa agacttgtct ttaataagag tacggtgcca cttgcctcaa aagttactat 300
ggtgcttaag attgtcttga tctgacatat atcaccttct gggttattta ctcattgtgc 360
caggacctgg cattttcatg tgcctttgac caagtgttca gaatttgctt gactctaacc 420
tggagagctt cttaagtgat gccccttcat ggagcttcta tgacagtgaa taaactatta 480
attgaaggaa aatgttataa ttaatgtatc tatttgctgc attgtatatg gattaaatga 540
taaaaaacaa gtaatctacc ctcagag 567

<210> 189
<211> 130
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(130)
<223> n = A,T,C or G

<400> 189
ccttttttt ttttttttt ttttttttt ttttttttt tttttatcnc ctaagnanat 60
tttaatataa attttgaaca gttataaaaa anaaanangg cctttgggtc aataacanaa 120
cataacaaaa 130

<210> 190
<211> 426
<212> DNA
<213> Homo sapien

<400> 190
gtcgaccaac ttcccacata tatttactaa gatgattaag acttacattt tctgcacagg 60
tctgcaaaaa caaaaattat aaactagtcc atccaagaac caaagtttgt ataaacaggt 120
tgctataagc ttggtgaaat gaaaatggaa catttcaatc aaacatttcc tatataacaa 180
ttattatatt tacaatttgg tttctgcaat atttttctta tgtccaccct tttaaaaatt 240
attatttgaa gtaatttatt tacaggaaat gttaatgaga tgtattttct tatagagata 300
tttcttacag aaagctttgt agcagaatat atttgcagct attgactttg taatttagga 360
aaaatgtata ataagataaa atctattaaa tttttctcct ctaaaaactg aaaaaaaaaa 420
aaaaag 426

<210> 191
<211> 550
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(550)
<223> n = A,T,C or G

<400> 191
ccttttttt ttttttttt ttttttttt tttagttngg gatatgacct ttattgaact 60
tatccaccan agnggaaata atgtctgtac aaaaccaaat gtttgttact ataacttctg 120
catcacaatt aaaatccaaa cagtttttta aaaacagtca actcaatcaa aacccactac 180
ttcanaatca atagcttntt tgaagccaca gtaacactta aatatggtta anactcgaat 240
gcanaaattt ggttggttgg aaagctaatt aaacttccaa cttgctcaaa tagaattaca 300
aaaaggcaaa attgtgtttt tcacananat acagnccact ggaatcacca acactggaca 360

gctgttanag tatttanagt cctganataa caaggaatcc aggcntcctt taaacagtct 420
tctgttgncc tttcttccca atcananatt tgtggatgtg tggaatgaca ccnccaccag 480
caattgtagc cttgatgann gaatccaatt cttcatctcc acgaatagca agttgcaagt 540
gacgaggggt 550

<210> 192
<211> 299
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(299)
<223> n = A,T,C or G

<400> 192
ccttttttt ttttttgaa attnnaaatt ttattacaaa aacttttat tgctataaga 60
aaaatatgta ttaattctac aaaataacat tcagattatg ttctaattca attattcaat 120
acaatttatt ctcttgtaaa taagagaaac ttatttagaa tataaaatta taacctaatg 180
acaaagctct agtaaattgn gaactacacc tctacaccgg gcttaaatgc atcctgatta 240
atgatttctt catacatgtc acttatttta tccaaaaaag gatttgagtt ctcgtcgac 299

<210> 193
<211> 536
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(536)
<223> n = A,T,C or G

<400> 193
ttttttttt ttttttttat tctnncaatt tttatttctc ttacatgctc aaagaagcca 60
agcaaatcca ggtatacatg tatatgtttt aattttacag gagagagaaa gaggtataag 120
gcaagaatta actacatttt catttcacta tttctttatg agctctattt tgctgctaag 180
ttcaagtttc aaaaaaatta ttaattcctc tgctatgtta tcttgtccca attcacaaaa 240
taacagggat ttccccatgt gactcaaaag caagaatctt actcctaaat aacataaaca 300
gcaatatgtg tgactactgt cattcattaa cttcgatggt gaagttcatt aaactgacca 360
ttaaaagaac atttgaacaa ttccaaaagg gagcaaggat aaatctccaa atcacccaat 420
agacaaggaa cccagagatg acatacagng tgctcacttc cacccactgc cactgagaac 480
actgattgct ctcttcaaac acagagcgaa gaatgggcct catgtcacat ggggca 536

<210> 194
<211> 566
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(566)
<223> n = A,T,C or G

<400> 194
gtcgactgca ctattaccca gggcagatat tatgagaaac tgtttcttct ctaagggttt 60
atggcagact ttgctttttt aacatgtgag aaatgaattt tttattttgt gatttatgtg 120
atttcttttg ctgagtgaag gaaaggagaa attgttgcta ttgtcagcat cttaaaggta 180

tttccagtca aggcaaggct aagtgctttg tgatagtatt aagcaagtca tgttttgaat 240
ggattacctg tagtgactca ttggaatgat ataattatac aagtaatgcc aaaaaccaag 300
tcaaagccta attaaccaaa gcactcattt aaaaatcatc atgtttggac ctatctggac 360
ctctcagcac tgtaaaatag ttttggtttt gtggcatatg aatagctgtt taacaaatca 420
aagttagctn tttgcttctc agctttttttg ggcaatacaa gttaagttct taatggggag 480
acattatcat ggcatgactt aagggaacat tggtttgtga aggaaaaaca gattatctaa 540
agccatctct atgtttctgt tcagat 566

<210> 195
<211> 217
<212> DNA
<213> Homo sapien

<400> 195
gtcgacataa ataaatggaa gaaatatcat gttcatgggc ttcaaaagtc aacagtaaag 60
atgccatttt ttcctaaatt gatctacagg ttcagtgcaa ttccttccga atctcaccag 120
ggtttttggt agacataaac aagtttattc taaaatttgt atggaaaggc acaggtcctg 180
gaataactaa agcaaccttа caaaaaaaaa aaaaaag 217

<210> 196
<211> 391
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(391)
<223> n = A,T,C or G

<400> 196
gtcgacggac agacttagga gttttgttta gagcagttaa catctgaagt gtctaatgca 60
ttaacttttg taaggtactg aatacttaat atgtgggaaa ccctttgcg tggtccttag 120
gcttacaatg tgcactgaat cgtttcatgt aagaatccaa agtggacacc attaacaggt 180
ctttgaaata tgcatgtact ttatattttc tatatttgta actttgcatg ttcttgtttt 240
gttatataaa aaaattgtaa atgtttaata tctgactgaa attaaacgag cgaagatgag 300
caccaaaaaa aaaaaaaaaa aaaaaaaaaa aaaannnaaa aaaaaaaann aaaaaaaaaa 360
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa a 391

<210> 197
<211> 445
<212> DNA
<213> Homo sapien

<400> 197
gtcgactgga tctttatgtc aatgtgtaca tagtacaagc ttttttactg gaattgaggt 60
ttaaaaccac acactgccct tttggtggtg tgcctgttgg gccaaaaatt gggtgataat 120
gtagtgtcac tttctcagct caatgcagtt tctacttttt cttatgggaa aatttttcat 180
aaaaccttt tgcaccaaaa cccaggggtg ttttttgcaa tatccttgtt atcctcgtag 240
tgtgccaagt cagaggcttt ctcttgccct tttcctgctg tgttctcagg cctcccaagg 300
gctgtttgac tcaacagtct acatccttcg ttgtgttttg gagaatgtgg gggtgggggt 360
cagagttcaa ggtgtctgtt ccctttтcct gtgaactctt tctagtccct atttggggag 420
ggtggctgga aacagatttt tgctg 445

<210> 198
<211> 463
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(463)
<223> n = A,T,C or G

<400> 198
gtcgacgtca gtattaatac tgagccagac tggcatctac agatttcaga tctatcattt 60
tattgattct taagcttgta ttaaaaacta ggcaatatca tcatggatac ataggagaag 120
acacatttac aatcattcat tgggcctttt atctgtctat ccatccatca tcatttgaag 180
gcctaatata tgccaagtac tcacatggta tgcattgaga cataaaaaag actgtctata 240
acctcaataa gtattaaaaa tcccattatt acccataagg ttcatcttat ttcattttta 300
gggaataaaa ttacatgtct atgaaatttc aattttaagc actattgttt ttcatgacca 360
taatttattt ttaaaaataa attaaaggtt aattatatgc atgtatgtat ttctaataat 420
taaaaatgtg ttcaatccct ganaaaaaaa aaaaaaaaaa aaa 463

<210> 199
<211> 129
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(129)
<223> n = A,T,C or G

<400> 199
gtcgaccggc gggcagctgc agcttctgct gctgaggccg ggattgctac gactgggact 60
gaagactcag acgatgccct gctgaagatg accatcagcc ancaagagtt tggccgnact 120
gggcttcct 129

<210> 200
<211> 523
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(523)
<223> n = A,T,C or G

<400> 200
ccttttttt ttttttttt tttttnaaat ctttatttaa aagtccatgc taataatgng 60
tttacatttt tacagttaca ttatgataga aactgttgga ttttttaaat atctaaaaca 120
atggcccact gaanaaagga acaattaact ctttaattaa ttccttagga taaataccca 180
naaatttaac agctagggca gacttntaat acaataccga aagtccttcc aaaaaccaag 240
nggttgccaa cttatgtccc ttagcattat aacattcttg agccaatagt gtaaaaatac 300
gctgacaatt ttataggcaa acattactca aggtatctta ctttccactt attactaaag 360
taattaaccc ctaaacagat gctcctcaac agngggacta catcctggta aacctatcat 420
aagttgaaac tatcaagttg aaatgcattt agtaccctga taaacctatc ataaagttga 480
aaatttgtaa attgaaccag tgtaaatcag aggccatntt act 523

<210> 201
<211> 532
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature

<222> (1)...(532)
<223> n = A,T,C or G

<400> 201
cctttttttt ttttttaca cttgagctta gccaaaaggc tgagaagcga ttttttttta 60
aaagctgttc tttaccatgg tttaaacgct aaaatgcata gctataaaaa caaaacactg 120
agctaatctg attacatcca gcttttgcac tcaatagccc ttgaccctcc agtcataagc 180
aagcctgtca ttcgcccagc cctgctatac attctcatta tagtttcgtt tcaaatccag 240
tgttacagaa acaaaacacc aagccctcaa tcatgctatg cgtatcttta tgtgtgcatg 300
tcttatgtat gtttaaaata aacatttta aatgttttag gccaggcttg gnggctcatt 360
cagttttagt ttgctttttt tttgccattc tttgttattt tgngaataag taaaacattt 420
aaatacttaa gtcacatctg tataaaaagt atattcatag gaaggaattt aacaatttta 480
ataaaactta ttagcatatc aatgagtttc aagatacacc tgaaactaaa tt 532

<210> 202
<211> 114
<212> DNA
<213> Homo sapien

<400> 202
ctccttggtg tggtcttctc tgagtgaatg tcacaaggcc ggtgacagga gggggtggag 60
gtgaggggac aaagtagagg ccgagggtca gtgcctttgg agaaagtcca gaga 114

<210> 203
<211> 304
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(304)
<223> n = A,T,C or G

<400> 203
gtcgaccttt ttttcccaac ttcttgcttt ctattggatt gttagggatt tctgtttttc 60
actttatttc tctctgctta tttgaaagct atacagcatg gttttctttc tttagggatc 120
actcttccac tttacttttt aaagatggat aaattttata catttaaaaa atttaatctg 180
tatttgtatc ttcttcctga gtggacctta gcatgttata aatgctcact gaataattct 240
cattgttaat tagagtttgg ttttattntt ttaaanncaa tgtacttact tattcttagn 300
gtaa 304

<210> 204
<211> 581
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(581)
<223> n = A,T,C or G

<400> 204
cngcgttgtg aggtgagcnn tttcagaagc gcgatcccag gacacgtcgg gaagcaagca 60
tccntttagc tgcttggaaa gaggaccaaa gacggctaaa anntcatttg gaaatatctc 120
taaatatttg ttaccatgta taagctgcta aagagaaatt gggcccaaca aaactaattg 180
aataattgag gcagatttgt gtgtatcatc aaattctatc cagaagttga agaatctgaa 240
tttaaagatt gtgtgcattt aataagagga tgacctttca gtttaatttc actatagaag 300

accatctgga aaatgaatta acacccatta gagatggagc tttgaccctg gattcctcaa 360
aagagctgtc agtctcagaa agtcaaaaag gagaagagag ggacagaaaa tgttctgcag 420
aacaatttga cttgcctcag gatcacttgt gggaacataa gtcaatggaa aatgcagctc 480
cctctcaaga cacagacagt ccactcagtg cagccagcag ttcaaggaac ttggagccac 540
atggaaaaca gccctccttg agagctgcca aagagcatgc t 581

<210> 205
<211> 409
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(409)
<223> n = A,T,C or G

<400> 205
gccctgaaga acagtgcctg gatgtggtga cccactggat ccaggaaggt gaagaagggc 60
gtccaaagga tgaccgccac ctccgtggct gtggctacct tcccggctgc ccgggctcca 120
atggtttcca caacaacgac accttccact tcctgaaatg ctgcaacacc accaaatgca 180
acgagggccc aatcctggag cttgaaaatc tgccgcagaa tggccgccag tgttacagct 240
gcaaggggaa cagcacccat ggatgctcct ctgaagagac tttcctcatt gactgccggg 300
gccccatgaa tcaatgtctg gtagccacgc gngcgacgtc acagagacnc ggaaaaacca 360
aagctatatn ggtaaagagg ctgtgcaacc cgctctcaat gtgccaaca 409

<210> 206
<211> 561
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(561)
<223> n = A,T,C or G

<400> 206
gtntcatggg aaaggacatg tctctcgaag aaaggttata aaccctgaga tatgagggtt 60
tttttgagac atccgagcct gtttcgttcc gggntgggan caggaataac cctgacttct 120
gagctttcat aaccccagga tcctccagaa aatttgcggc gcgctgaggg aaaaccttgc 180
tgaagctgta cattggaatg cgtttacagt cattgtaatg gaagcaaaat acatgaagga 240
aaaactgtta tttgtatccc tgcttattgc acctgacgac tagttgcaga tggttttgtt 300
tacctaagaa aacttgtgat ataaatgaaa aaaacacctg ttttcctaga gtcattggtt 360
acaaatatgc ttcgtctaag agctatttgt ccattctcct ggagagtgtt tcaatttcga 420
cccatcagtt gtgaaccact aattattcag atgaataagt gtacagatga ggagcaaatg 480
tttggtttta ttgaaagaaa caaagccata ctttcagaaa agcaagtggg atgtgcattt 540
gatatgcttt ggaagcttca a 561

<210> 207
<211> 461
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(461)
<223> n = A,T,C or G

<400> 207

ggtntttcca gccaatgtga cctttaaaac ctatgaaggt ntnatgcaca gttcgtgtca 60
acaggaaatg atggatgtca agcaattcat tgataaactc ctacctccaa ttgattgacg 120
tcactaagag gccttgtgta gaagtacacc agcatcattg tagtagagtg taaacctttt 180
cccatgccca gtcttcaaat ttctaatgtt ttgcagtgtt aaaatgtttt gcaaatacat 240
gccgataaca cagatcaaat aatatctcct catgagaaat ttatgatctt ttaagtttct 300
atacatgtat tcttataaga cgacccagga tctactatat tagaatagat gaagcaggta 360
gcttcttttt tctcaaatgt aattcagcaa aataatacag tactgccacc agatttttta 420
ttacatcatt tgaaaattag cagtatgctt aatgaaaatt t 461

<210> 208
<211> 296
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(296)
<223> n = A,T,C or G

<400> 208
gatgaacatc catccnaatt ncgaagagcc tatattatac cctcttcaag aatttgcatg 60
gcatcaatat ctacaggaga aaaaaaggga actcaaaaat gaaacctggg aatattcttc 120
ctctgtgatt tcttttgtta atggtcagtt tctgggtgat gcattggatc tgcagaaatg 180
ggcccacgag gtgtgggata tagttgacat taaaccctct gcactttatg acgcactcac 240
tgaggatttt tccgctaagt tcttaagaga caccaagcat gatttcgtgt ttttgg 296

<210> 209
<211> 282
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(282)
<223> n = A,T,C or G

<400> 209
gcataataaa tgctttgagc ttcttgacta tcatatacct aaagaaagtg catcagagaa 60
tnatattcct gacttttnnc tgactggcaa aaagcnagct ttatcttgtc ttataggatg 120
cttagtttgc cactncactt caaaccaatg ggacagtcnt anatggngng acagtgttna 180
ancncaccaa aaggntncnt ttccntgggg ccancnctgt cntnancctc nctaanctat 240
ttgnanaatt ttaancncnn gttaantaaa aaaaaaaaaa aa 282

<210> 210
<211> 1445
<212> DNA
<213> Homo sapiens

<400> 210
ggcgttgtga ggtgagcttt ttcagaagcg cgatcccagg acacgtcggg aagcaagcat 60
ccccagagct gcttggaaag aggaccaaag acgtctaaaa agtcatttgg aaatatctct 120
aaatatttgt taccatgtat aagctgctaa agagaaattg ggcccaacaa aactaattga 180
ataattgagg cagatttgtg tgtatcatca aattctatcc agaagttgaa gaatctgaat 240
ttaaagattg tgtgcattta ataagaggat gacctttcag tttaatttca ctatagaaga 300
ccatctggaa aatgaattaa cacccattag agatggagct ttgaccctgg attcctcaaa 360
agagctgtca gtctcagaaa gtcaaaaagg agaagagagg gacagaaaat gttctgcaga 420

acaatttgac ttgcctcagg atcacttgtg ggaacataag tcaatggaaa atgcagctcc 480
ctctcaagac acagacagtc cactcagtgc agccagcagt tcaaggaact tggagccaca 540
tggaaaacag ccctccttga gagctgccaa agagcatgct atgcctaaag atttaaagaa 600
gatgttagaa aataaagtca tagaaacatt accaggtttc cagcatgtta agttatcagt 660
agtgaaaacc atcttgttga aagagaactt ccctggagaa aacatagttt caaaaagctt 720
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tggaggtgtt catctctttc agaagtttgt agaagaaaga gatgttttta agaccagaat 1320
actcaaaata attgatgaag gattgaagag gttcataatt gaaataactt ttaagtttcc 1380
tggttaatta acattcactg agtatccaaa atgaaataaa cagaaggacc aaaaaaaaaa 1440
aaaaa 1445

<210> 211
<211> 414
<212> DNA
<213> Homo sapiens

<400> 211
aaaaagggaa ggaaggagag acagataact ctcagtcatt taaaaaacta caataaaata 60
ttatgaatta tcaattagat caaagttcct cacagctata tttatatagg taaaaaaaaa 120
ttaaataggc taaatgccca aaaatttaag actggcaaaa tatacttggc taaatactgt 180
gcgtctctat taaataccat gtttcagaag aattattaat gacatgagaa tatgctcaaa 240
atacatattg atatgtgcaa atacatattg caaagtaaga ttatagaatg atcctagttc 300
aaaaatgtca catatatatg tatttaaaaa aaaaggcagt taagatttac aacaaaatgt 360
tagtggtggg accttctggt aggaatacag attttttttt attcagaagt tttt 414

<210> 212
<211> 720
<212> DNA
<213> Homo sapiens

<400> 212
gtcgacgtaa aatagaaaca gaaggggact ttatcaacct gattaacttt ctcaacatgt 60
taaccctaca gttaacatta taatcaatgg tgaatcattg agtactttcc ttctaagatc 120
agaaacagtt caaagtccac tctcaccatt tctattcaac attgtactgg aatcccagcc 180
agtgcagtaa taccaataat aaaaaattaa agtcataaag attgaaaagg atgaagtaaa 240
gctatttcaa ttctatttag aagtatttag aaaccccaaa gaatctacaa aaaactaata 300
gaaataagtg aatatatgaa ggtcttacta tacaagatca acatatcaaa agcagtggta 360
tttaagaaaa ggttggagac tatttataat aaacagtggt tgaattttgt taatgctttt 420
tctgtatttt ttgaaatgat cttattattt ttctctttgc taaaaatgtg agtaaccttg 480
agttgacttt ctgtgtaaat caaccttgtg tcccaggaaa aaactccaat tgatcatgat 540
gtgttatcct ttttatacat tgctgtattc aatatgctaa tatatttatt ttttgtgtct 600
atttcatgag ggatatcagt atgtaattgt tttttcttgt tatatctttg ttggttttat 660
taatcaacat tatgctaact tcatacaata tattggaaca tgctccctcc ttttattttc 720

<210> 213
<211> 1114
<212> DNA
<213> Homo sapiens

<400> 213

gctcctaaca aagaagatat cttgaaaatt tcagaggatg agcgcatgga gctcagtaag 60
agctttcgag tatactgtat tatccttgta aaacccaaag atgtgagtct ttgggctgca 120
gtaaaggaga cttggaccaa acactgtgac aaagcagagt tcttcagttc tgaaaatgtt 180
aaagtgtttg agtcaattaa tatggacaca aatgacatgt ggttaatgat gagaaaagct 240
tacaaatacg cctttgataa gtatagagac caatacaact ggttcttcct tgcacgcccc 300
actacgtttg ctatcattga aaacctaaag tatttttgt taaaaaagga tccatcacag 360
cctttctatc taggccacac tataaaatct ggagaccttg aatatgtggg tatggaagga 420
ggaattgtct taagtgtaga atcaatgaaa agacttaaca gccttctcaa tatcccagaa 480
aagtgtcctg aacagggagg gatgatttgg aagatatctg aagataaaca gctagcagtt 540
tgcctgaaat atgctggagt atttgcagaa aatgcagaag atgctgatgg aaaagatgta 600
tttaatacca aatctgttgg gctttctatt aaagaggcaa tgacttatca ccccaaccag 660
gtagtagaag gctgttgttc agatatggct gttactttta atggactgac tccaaatcag 720
atgcatgtga tgatgtatgg ggtataccgc cttagggcat ttgggcatat tttcaatgat 780
gcattggttt tcttacctcc aaatggttct gacaatgact gagaagtggt agaaaagcgt 840
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aagtcagtag tacattttta aatgagggtg gtttttttct ttaaaacaca tgaacattgt 1020
aaatgtgttg gaaagaagtg ttttaagaat aataattttg caaataaact attaataaat 1080
attatatgtg ataaattcta aaaaaaaaaa aaaa 1114

<210> 214
<211> 1495
<212> DNA
<213> Homo sapiens

<400> 214
gtaacggatg gtgcgccaac gtgagaggaa acccgtgcgc ggctgcgctt tcctgtcccc 60
aagccgttct agacgcggat gaagtgcaaa acaaacttct ccatagagga gttgttgcaa 120
agttccagtt tataccaaac agtaatcaga ttccattgga agctaaagat tttgagagcc 180
ttttgtacta tatgcaacta acttgatttc aagcttggga acttttaaaa aaaacattaa 240
agcaaaatga aaaatgcttt ctgaaagcag ctccttttg aaaggtgtga tgcttggaag 300
ccattttctg tgctttgatc cactaatgct aaggacacat taggattggt catggaaata 360
gaatgcacca ccatgagcat catcacctac aagctcctaa caaagaagat atcttgaaaa 420
tttcagagga tgagcgcatg gagctcagta agagctttcg agtatactgt attatccttg 480
taaaacccaa agatgtgagt ctttgggctg cagtaaagga gacttggacc aaacactgtg 540
acaaagcaga gttcttcagt tctgaaaatg ttaaagagtt tgagtcaatt aatatggaca 600
caaatgacat gtggttaatg atgagaaaag cttacaaata cgcctttgat aagtatagag 660
accaatacaa ctggttcttc cttgcacgcc ccactacgtt tgctatcatt gaaaacctaa 720
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taatttggtg gcactggtat aaccacccat taaagtcagt agtacatttt taaatgaggg 1380
tggtttttt ctttaaaaca catgaacatt gtaaatgtgt tggaaaaaag tgttttaaga 1440
ataataattt tgcaaataaa ctattaataa atattatatg tgataaattc taacc 1495

<210> 215
<211> 838
<212> DNA
<213> Homo sapiens

<400> 215

ggctgggaag tcagttcgtt ctctcctctc ctctcttctt gtttgaacat ggtgcggact 60
aaagcagaca gtgttccagg cacttacaga aaagtggtgg ctgctcgagc ccccagaaag 120
gtgcttggtt cttccacctc tgccactaat tcgacatcag tttcatcgag gaaagctgaa 180
aataaatatg caggagggaa ccccgtttgc gtgcgcccaa ctcccaagtg gcaaaaagga 240
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gaggcaggaa gcagtggctt aggaaaagca aagagaaaag catgtccttt gcaacctgat 360
cacacaaatg atgaaaaaga atagaacttt ctcattcatc tttgaataac gtctccttgt 420
ttaccctggt attctagaat gtaaatttac ataaatgtgt ttgttccaat tagctttgtt 480
gaacaggcat ttaattaaaa aatttaggtt taaatttaga tgttcaaaag tagttgtgaa 540
atttgagaat ttgtaagact aattatggta acttagctta gtattcaata taatgcattg 600
tttggtttct tttaccaaat taagtgtcta gttcttgcta aaatcaagtc attgcattgt 660
gttctaatta caagtatgtt gtatttgaga tttgcttaga ttgttgtact gctgccattt 720
ttattggtgt ttgattattg gaatggtgcc atattgtcac tccttctact tgctttaaaa 780
agcagagtta gatttttgca cattaaaaaa ttcagtatta attaaaaaaa aaaaaaaa 838

<210> 216
<211> 938
<212> DNA
<213> Homo sapiens

<400> 216
cacctcaggc tgtggctctt tgggcttctt cctaatgcag aagaagttgc ccagcagcaa 60
aatcagggag gaggtgagca cctcggcccc cgccaggatg aacacgtaca tgtagacgtg 120
ggtcgcatcc aggagtttgc ctcccgaagg gggcccgacg agcacggcca ccgcctccat 180
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ccccgtgatg accccagtgg tgaggtagac ctggatgatg ctccggcaaa aggacgcagc 900
caccatgccc agcgacgcaa agagaccccc cacaagca 938

<210> 217
<211> 1982
<212> DNA
<213> Homo sapiens

<400> 217
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ccatgggagg ggccgtggtg gacgagggcc ccacaggcgt caaggcccct gacggcggct 120
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tggtggtcac ggcccagccg ggctcggggc cgccgcgacc ctcccggcgc ctgctagacc 720
tgagcgtctt ccgggaccgc ggctttgtgc tttacgccgt ggccgcctcg gtcatggtgc 780
tggggctctt cgtcccgccc gtgttcgtgg tgagctacgc caaggacctg ggcgtgcccg 840

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ggctcacatg gggcctgtgc ccacccctct tgagtgtctt ggggacagct ctttccaccc 1920
ctggaagatg gaaataaacc tgcgtgtggg tggagtgttc tcgtgccgaa ttcaaaaagc 1980
tt 1982

<210> 218
<211> 592
<212> DNA
<213> Homo sapiens

<400> 218
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<210> 219
<211> 650
<212> DNA
<213> Homo sapiens

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gagcatgtaa gagaaataaa aattgaaaga ataaaaaaaa aaaaaaaaaa 650

<210> 220
<211> 782

<212> DNA
<213> Homo sapiens

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<210> 221
<211> 2417
<212> DNA
<213> Homo sapiens

<400> 221
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<211> 1466
<212> DNA
<213> Homo sapiens

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